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ABSTRACT

The effects of different vocational education and training (VET) delivery modes on module completion rates and module pass rates (MPRs) were examined by analyzing student outcomes from the available data on module outcomes collected by Australia's National Centre of Vocational Education Research and information provided by 769 Australians (average age, 27.7 years) who had previously completed VET studies. Of those surveyed, 357 (46.4%) had been taught by flexible delivery or alternative methods of instruction and 412 (53.6%) had been taught by traditional face-to-face teacher directed methods of instruction. Although the analysis did not provide definitive answers about which strategy should be used to best ensure consistent success in terms of MPRs for all clients, it did establish that nontraditional delivery strategies are generally able to record solid performances. Both groups generally valued their training and believed that it had given them the assistance they required. The flexible delivery students cited advantages related to flexibility, whereas the traditional delivery students primarily cited advantages related to contact with others. The most common suggestions for improvement from both groups related to more structure for courses (including spending more time on revision and organizing classes differently). Twelve tables of technical data are appended. (Contains 29 tables/figures.) (MN)

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# The **effects** of **different modes** of **delivery: Student outcomes** and **evaluations**

*Josie Misko*

NCVER

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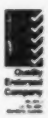

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# Executive summary

## About the study

The principal aims of this study were to determine the effects of different modes of delivery on pass rates and module outcomes, and to determine from students, their experiences and evaluations of the mode of delivery undertaken.

In the first instance pass and completion rates in six discipline groupings (accounting, commercial cookery, computing, hospitality, civil engineering and electronic engineering) were computed for each mode of delivery employed. These rates were then placed into bands of performance to show the relative ranking of the different delivery strategies. Similar rates were also computed for all vocational education and training (VET) students regardless of discipline grouping.

The analysis of student experiences and evaluations of the mode of delivery were based on their responses to a survey questionnaire.

Because the survey gathered information from only those students who had successfully completed their studies, it was considered important to access information on those students who had not completed their studies. The data on student outcomes from the national VET data collection assisted with information about this group of students.

## Major findings—student outcomes

### Module pass rates

This analysis has been unable to provide definitive answers about which strategy should be used to best ensure consistent successes in terms of module pass rates (MPRs) for all clients. However, it has shown that non-traditional delivery strategies are generally able to record solid performances. MPRs comprise the number of module enrolments in which a student is assessed and is awarded a pass taken as a percentage of the number of such enrolments which result in a pass, a fail and a *withdrew–failed* outcome. These findings show that module pass rates for all but one of the strategies were generally high. In addition, all strategies across all disciplines were able to produce pass rates which were over 80 per cent and, with the exception of one, were capable of producing pass rates over 90 per cent.

The external/correspondence mode of delivery, consistently produced MPRs for almost all discipline groupings which were typically about half the rate of those produced by other strategies, and often well below the 50 per cent mark.

It must be acknowledged, however, that the percentage of *withdrew–failed* outcomes for the external/correspondence delivery strategy for five out of the six discipline groupings represented about a third of all outcomes. This inflated the MPR. For this reason it was decided to develop what we have called a student-assessed pass rate (SAPR) which takes into account only the results obtained from an assessment.

### Student-assessed pass rates

The student-assessed pass rate describes the number of modules in which students are assessed and are awarded a pass taken as a percentage of all modules in which students are

assessed. When this pass rate is computed, the SAPRs for the external/correspondence delivery strategy produced pass rates which are similar to those produced by other strategies.

### Module completion rates

An examination of module completion rates (MCRs) for the different strategies showed that all strategies were able to produce completion rates at about the 75 per cent level, and all but one able to produce pass rates which were 82 per cent or over. However the external/correspondence delivery strategy consistently produced completion rates which were in most cases substantially below those produced by other strategies.

## Major findings—student evaluations

### About the students

In this study all students who received instruction delivered in a predominantly face-to-face teacher-directed manner were described as traditional delivery students. All students who received instruction via alternative strategies were described as flexible delivery students.

A total of 769 students provided responses to the questionnaire survey. Traditional delivery students slightly outnumbered flexible delivery students. Flexible delivery students tended to be older than traditional delivery students. They had a median age of about 31 years as compared to a median age of about 25 years for traditional delivery students.

### Reasons for choosing method of delivery

Flexible delivery students were more likely than traditional delivery students to say they had chosen the method of delivery because it fitted in with their lifestyles. Traditional delivery students were more likely to indicate that they had chosen the method because it was the only one offered.

### How students learn best

Flexible delivery students were far more likely than traditional delivery students to say that they learnt best when studying individually with texts and study guides to help them, doing their own research and interacting on-line with a computer. Traditional delivery students were more likely than flexible delivery students to say that they learnt best from a lecturer in a traditional classroom, and practising doing things in a practical workshop. They were also more likely to say that they learnt best when working on a problem with other members in a group, and looking at pictures or diagrams which help explain concepts and processes.

### Student self-ratings of skill levels

There were no statistically significant differences between the two groups on students' self-ratings of their literacy, language, and problem-solving skills. However the *'well above average'* ratings showed that flexible delivery students were far more likely to rate themselves as *'well above average'* in all cases apart from mechanical skills, than traditional delivery students. The *'below average'* ratings, showed traditional delivery students to consistently rate themselves at this level at a slightly higher rate than flexible delivery students.

### Preparation and support for learning

These findings indicate that students generally valued the training they had undergone whatever the delivery strategy. Students believed that they had been provided with the

assistance they required prior to commencing their studies as well as that required for the duration of their studies.

## Problems and concerns

The most common problems for flexible delivery students included making enough time to study and fitting in family obligations with their study commitments. Completing assignments to deadlines, finding enough time to study, and following instructions for practical sessions were the most common problems for traditional delivery students.

## Perceived advantages of the delivery methods

Flexible delivery students cited advantages which related to flexibility; that is, they appreciated the opportunity the method had given them to self-pace their study program and fit in study times with work and family obligations. For traditional delivery students the most frequently cited advantages related to contact with others. This included face-to-face contact with teachers and students, and the support received from teachers.

## Perceived disadvantages of delivery methods

The most common disadvantage associated with flexible delivery methods, related to lack of interaction with others. The lack of instant access to teachers when experiencing difficulties, and the lack of general interaction with other students and teachers were the most frequently reported problems. The second most frequently cited disadvantage concerned personal issues such as the self-discipline required to get things done. For traditional delivery students the most common disadvantage, identified by well over a third of students, related to time pressures.

## Perceived effectiveness—student evaluations

Students were positive in their evaluations of the extent to which the method they had utilised had suited the content of the module studied and had enabled them to understand subject material, practise skills and complete course requirements. Because there were no major differences between the two groups in how they evaluated the effectiveness of their strategy, it was not possible to determine whether the traditional method helped students do better than the flexible delivery method or vice versa.

However, flexible delivery students were far less likely to claim that their method allowed them to have ready access to instructors than did traditional delivery students. Although not unusual, this finding provides us with a basis for comparing the two groups. Ready access to instructors at the time of learning is one of the central differentiating factors between flexible and traditional delivery methods.

## Student satisfaction

Flexible delivery students were more likely than traditional delivery students to report that they looked forward to their study sessions, preparing for assignments and doing assessments. In addition, they were also more likely to report that they would recommend this method of learning to other students.

## Suggestions for improvement

The most common suggestions for improvement for both groups related to altering the way training was delivered by adding more structure to the course. This included alterations like changing the time at which courses started, spending more time on revision, organising classes in a different way etc.

## Conclusion and recommendations

### Student outcomes

Although it is relatively straightforward to produce rankings of delivery strategies in terms of module pass and completion rates and student-assessed pass rates, it is more difficult to determine a direct relationship between the strategy and the outcomes produced; that is, it is difficult to relate the strategy to the outcomes. The influence of other variables needs to be taken into account. However, it is encouraging to note the strong performances of alternative methods of delivery in producing student-assessed pass rates. The success of any strategy in delivering pass rates or completion rates is strongly dependent on those who are delivering the training and the assessment as well as on those who are receiving the training and undertaking the assessment. Any evaluation of the effects of different delivery strategies needs to take into account the experiences of students and teachers.

The information on module outcomes that we have examined in part 1 of this study is based on information provided by training providers to national authorities. Another consideration that must be taken into account when evaluating the effects of different modes of delivery is the reliability of this information. If providers do not have sufficient staff and other resources to implement systems that will enable them to provide accurate information according to the AVETMIS Standard, it is difficult to determine the extent to which module outcomes are affected by different delivery strategies. Furthermore, training providers may have other reasons for reporting outcomes in certain ways.

### Student evaluations

Information from students has provided a number of possible explanations for why students find difficulty in completing work or passing assessments, and while there is little in these findings to suggest that one method is substantially better than another, it is quite clear that the completion rates are poorest for the external/correspondence delivery method. Information from students has been valuable in highlighting the advantages of each strategy and the problems that can occur.

The findings also indicate that students have chosen delivery methods which harmonise with the way they believe they learn best. They also suggest that students are generally prepared to accept the responsibility for their own shortcomings.

The findings suggest that, in the long run, unless students are strongly motivated to follow a disciplined study routine, the more flexible methods of instruction may not be the most efficient for them. Busy people may need to be mindful of the fact that, although increased flexibility may bring certain advantages in terms of when, where, and how they study, this increased flexibility may not automatically translate into better pass or completion rates.

In summary, based on the findings from the student survey and on the analysis of student outcomes we can conclude that certain learning principles should guide the structure of the learning whatever the delivery method chosen. These are the need for supportive instructional activities, clear instructional materials, opportunities to discuss problems or issues with teachers and peers, availability of teacher support, timely feedback, practical examples and enough time and willingness to practise skills and meet requirements.

### Recommendations for action

Because delivery strategies on their own do not produce module outcomes, the focus of these recommendations needs to be directed to students and their teachers and administrators. They address the following requirements:

1. **The provision of information sessions for students**. These sessions (delivered on campus, or via the internet etc.) can alert students to the particular problems associated

with some methods of delivery. Students should be made aware that the external/correspondence method may not be the only way to achieve flexibility in how, when, and where to study.

2. **The provision of regular opportunities for face-to-face interaction between teachers and students and students with their peers.** This can be accomplished by providing workshops prior to the commencement of the course, midway through the course and, where appropriate, prior to the assessment process. The purposes of introductory workshops would be to introduce students to teachers and other students, to explain the basic requirements of the course and to provide some helpful hints on study skills and time-management issues.
3. **The provision of professional development opportunities for teachers.** This can be accomplished by enabling teachers to attend special workshops designed to provide them with the information and skills required for assisting students. During these workshops teachers could share their experiences with successful strategies. For teachers in flexible delivery modes the emphasis can be on helping students to remain focussed so that they complete their work on time.
4. **Appropriate and well-maintained facilities and equipment.** Arrangements should be made to ensure that electronic equipment is fully maintained or kept up to date to enable students and teachers to maintain regular contact. Where students are dependent on this equipment for completing assignments, arrangements should be made to ensure their easy access to this equipment during or after hours.

## Recommendations for further research

In this study there has been no attempt to control for variations in level or ability of students, and ability and experience of teachers. There has also been no attempt to control for level of course, or subject content. An experimental study in which students taking the same level of course are randomly assigned to delivery strategies which are provided by teachers of similar ability and experience, would further increase our knowledge of the effects of different modes of delivery on module outcomes.

Another area worthy of further research is the actual status of those outcomes which are reported as unknown.

# Different modes of delivery: About the study

## Introduction

During the last decade or so there has been a concerted effort to improve the competitiveness of Australian industry by focussing on increasing the skill levels of Australian workers by offering training tailored to industry needs. One way of improving training has been to encourage training providers to adopt flexible delivery strategies in their educational programs. Increasing flexibility of delivery has been aimed to provide clients with increased choice in what they want to learn, when they want to learn it, where they want to learn it, and how they want to learn it.

Increasing the flexibility of training delivery has been justified in terms of preparing workers for work environments which increasingly reward independence and self-direction. It has also been based on principles of social justice which aim to provide fair access for all groups wishing to participate in training.

Flexible delivery is a blanket term which embraces all non-traditional forms of training delivery. These typically employ a variety of media to deliver learning resources to students in a range of situations—the home, campus, workplace, and learning centres. These can be combined in a variety of ways to meet the needs of students and employers.

Although increasing the choice of delivery methods for students may help to customise their training to accord with their perceived needs, there have been very few comprehensive studies of how these strategies perform in delivering suitable outcomes for students. This study aims to provide some information on this.

## Collecting the data

This study was designed to examine the effects of different modes of delivery in terms of student outcomes and student perceptions. It examined student outcomes from the available data on module outcomes collected by the National Centre of Vocational Education Research (NCVER) and information provided by students who had completed their studies.

### Student outcomes

The first section examines student outcomes in terms of module outcomes (as reported in the national vocational education and training [VET] data collection) for all VET students as a whole and students from six specific discipline groupings. These discipline groupings include accounting, commercial cookery, hospitality, computing, civil engineering and electronic engineering. It was considered important to examine these data because they provide information on all students. Information on students who had and those who had not completed their studies is available in the data collection.

### Survey of student perceptions

The second section examines the findings from a survey of students who have studied one specific module within these discipline groupings in a variety of ways. The mode of delivery used in each of module was identified by lecturers responsible for teaching the students who were involved in the survey.

The modules chosen for the survey were:

- Accounting to trial balance (NOS 124) and its equivalent in New South Wales
- Spreadsheets 1
- Internet fundamentals (Introduction to the internet)
- Micro-processing fundamentals (NEO18)
- Engineering drawing interpretation (NBB12)
- Principles and methods of commercial cookery (BCC1)
- Hospitality essentials

The survey collected information from students on:

- reasons for selecting the delivery mode
- their induction and preparation for learning under this delivery mode
- the clarity, availability and accessibility of learning and other reference materials
- their ability to fit in work and family obligations with study time
- their ability to manage their time to complete assignments

Student evaluations of the success of the delivery strategy was gauged from information on:

- student satisfaction with the way their module was taught
- the extent to which students believed the strategy allowed them to have ready access to instructors, to complete course requirements, to understand subject matter, and to practise skills required

Other indications of the effectiveness of the different strategies were obtained from student reports of the advantages and disadvantages of the delivery strategy experienced, and suggestions made for its improvement.

The analysis examines the responses of all students taught by a traditional class-based delivery strategy and compares these to the responses of all students taught by strategies which are considered to be more flexible. The demographic backgrounds of students, their learning-style preferences, and self-ratings of literacy, numeracy, language and problem-solving abilities, are also taken into account.

# Part 1: Student outcomes

The national VET statistical collection reports information on module outcomes according to eight delivery strategies. These strategies, classified according to the Australian Vocational Education and Training Management Information Statistical Standard (AVETMISS) codes, include: local class; remote class; self-paced scheduled; self-paced unscheduled; external/ correspondence; workplace/experiential; mixed delivery; and other delivery strategies.

The strategies are described in detail in figure 1.

**Figure 1: Descriptions of delivery strategies**

**Local class**: This category relates to classes held on a common campus in a local classroom situation. Students attend classes at scheduled times and are presented with subject material by a lecturer. The local organisation permits extensive interaction between lecturer and students.

**Remote class**: This category differs from local class organisation only in that the students are located in one or more remote sites, connected by some form of communications system (such as video-conferencing or tele-conferencing). The strategy is generally used to extend the classroom to students for whom attendance at the main site is not practical. Interaction between lecturer and students is dependent on the technology employed.

**Self-paced scheduled**: This category relates to self-paced learning. This refers to scheduled class organisation in which the learning is directed through self-paced materials with assistance available from a tutor. Students attend classes at scheduled times and progress at their own pace using print-based or computer-oriented materials. Typically, assessment is on demand and is often competency-based.

**Self-paced unscheduled:** This category relates to a form of self-paced learning in which the student has a variety of learning options. Attendance on campus is usually required only for guidance and progress monitoring, though there are typically substantial resource materials available on campus for students. Learning resources are essentially the same as those available through conventional self-paced learning. The term 'open learning' is often associated with this delivery strategy.

**External/correspondence:** This category relates to distance learning. It includes standard correspondence learning in which the students receive materials and assignments by post. Learning is directed by structured learning materials and is effectively self-paced. Communication between tutors and students is primarily in printed form via the mail system.

**Workplace/experiential:** This category relates to experiential learning and on-the-job learning. It will generally incorporate some degree of informal instruction as well as workplace experience.

**Mixed delivery:** This category relates to situations where more than one delivery strategy is used to deliver substantial components of a single module. For example, if a module combines local class delivery and regular workplace experience to present essential material to the client, then it should be classified as mixed delivery.

**Other delivery strategies:** This category includes any category which is not described in the first seven categories above. It should not be applied if any of these categories offers a reasonable description of the main form of delivery strategy in use.

## Module outcomes

The following are the major ways for the reporting of module outcomes. These are:

- pass (student assessed)
- fail (student assessed)
- results withheld (student assessed)
- no assessment—satisfactory completion of hours
- no assessment—studies not completed
- status granted through recognition of prior learning (RPL)
- status granted through credit transfer
- withdrew without failure
- withdrew–failed
- withdrew–transferred
- not stated

Student-assessed passes, fails, and results withheld refer to outcomes obtained in modules as a result of student assessment.

## Demographic data

### Module enrolments

The overwhelming majority of enrolments were in modules delivered by the local class method of delivery. Table 1 provides a breakdown of the number and percentage of enrolments for the different delivery strategies for each discipline grouping. Table 1 and all following tables report on unpublished data from the national VET collection held by NCVER.

**Table 1: Module enrolments by delivery strategy by discipline grouping**

| | Accounting | | Commercial cookery | | Computing | | Hospitality | | Civil engineering | | Electronic engineering | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| Local class | 202 032 | 81.4 | 87 872 | 91.5 | 817 106 | 91.5 | 343 701 | 86.6 | 21 809 | 87.9 | 84 889 | 91.6 |
| Remote class | 188 | 0.1 | 317 | 0.3 | 5 104 | 0.3 | 3 105 | 0.8 | 307 | 1.2 | 197 | 0.2 |
| Self-paced scheduled | 10 861 | 4.4 | 554 | 0.6 | 52 723 | 0.6 | 2 349 | 0.6 | 665 | 2.7 | 3 128 | 3.4 |
| Self-paced un-scheduled | 2 131 | 0.9 | 659 | 0.7 | 14 304 | 0.7 | 3 677 | 0.9 | 77 | 0.3 | 155 | 0.2 |
| External/ correspondence | 18 121 | 7.3 | 450 | 0.5 | 28 840 | 0.5 | 2 510 | 0.6 | 933 | 3.8 | 836 | 0.9 |
| Workplace/ experiential | 939 | 0.4 | 1 594 | 1.7 | 2 362 | 1.7 | 10 861 | 2.7 | 260 | 1.0 | 144 | 0.2 |
| Mixed | 6 093 | 2.5 | 3 587 | 3.7 | 16 412 | 3.7 | 14 839 | 3.7 | 454 | 1.8 | 251 | 0.3 |
| Other | 7 951 | 3.2 | 1 039 | 1.1 | 24 886 | 1.1 | 15 687 | 4.0 | 285 | 1.1 | 3 040 | 3.3 |
| **Total** | **248 316** | **100.0** | **96 072** | **100.0** | **961 737** | **100.0** | **396 729** | **100.0** | **24 790** | **100.0** | **92 640** | **100.0** |

### Male and female students

When all module enrolments for each delivery strategy within each discipline grouping were analysed according to gender, the resulting analysis showed that there is a gender imbalance within each discipline; that is, enrolments by females outnumbered those by males in accounting, computing and hospitality. The reverse is the case for commercial cookery, civil

engineering and electronic engineering. When enrolments by male and female students are examined separately for each discipline grouping, the analysis shows that the overwhelming majority of module enrolments by both groups were accounted for by the local class method of delivery. There were no major differences between the percentage of male or female enrolments within the different strategies for each discipline grouping. A breakdown of this information appears in appendix A.

### Full-time and part-time workers

Although enrolments by full-time workers outnumbered those by part-time workers, this was not always the case for each discipline grouping. The pattern for the computing, and electronic and civil engineering discipline groupings indicated that the great majority of enrolments within each strategy was for students who were employed full time. Although this was also the general pattern for accounting, enrolments for the workplace/experiential category in this discipline were more likely to be by students in part-time work. Part-time worker enrolments in hospitality outnumbered those for full-time workers. The pattern was reversed, however, for the external/correspondence delivery strategy where full-time worker enrolments outnumbered those for part-time workers. Full-time worker enrolments also outnumbered those for part-time workers in commercial cookery. Nevertheless, this was not the case for all delivery strategies. Those using the self-paced unscheduled, self-paced scheduled and the remote modes of delivery were more likely to be taken up by students in part-time work.

Module enrolments can also be analysed for all full-time and part-time workers in each delivery strategy. More than three-quarters of full-time and part-time worker enrolments in all discipline groupings were accommodated by the local class delivery strategy. This was also the case for part-time worker enrolments. However, external/correspondence enrolments by full-time workers were two times greater than those by part-time workers. A breakdown of full-time and part-time worker enrolments by delivery strategy for each discipline grouping is found in appendix B.

### Students of different age groups

The majority of all enrolments for students between 15 and 54 years of age was covered by the local class method of instruction. This was the case for students in the 15–17, 18–19, 20–24, and 25–54-age groups in all discipline groupings. However, those in the 25–54-age group were far more likely to be represented in modules delivered by the external/correspondence delivery strategy than were those of any of the other three age groups in all discipline groupings. A breakdown of this information appears in appendix C.

## Indicators of performance—module pass rates

### All students within six discipline groupings

The module pass rate (MPR) describes the number of pass outcomes as a percentage of the total number of pass, fail and withdrew–fail outcomes. These MPRs were computed for each delivery strategy across all the selected discipline groupings. They show that all delivery strategies were capable of delivering MPRs of 80 per cent or over and all but one capable of delivering MPRs of 90 per cent or over. A breakdown of the MPRs for each discipline grouping by delivery strategy appears in table 2.

**Table 2: Module pass rates by delivery strategy and discipline grouping**

| Delivery strategy | Accounting | Commercial cookery | Computing | Hospitality | Civil engineering | Electronic engineering |
|---|---|---|---|---|---|---|
| Remote class | 98.0 | 90.2 | 92.3 | *94.1 | 100.0 | 84.4 |
| Workplace/ experiential | *91.0 | 89.3 | 97.3 | *96.0 | *92.3 | 87.7 |
| Mixed | 90.4 | *81.1 | *92.6 | *89.3 | 99.1 | 92.8 |
| Other | 89.1 | 91.9 | 91.8 | 90.9 | 85.7 | 97.3 |
| Self-paced scheduled | 88.2 | 95.5 | 83.7 | 91.8 | 87.5 | 74.8 |
| Self-paced unscheduled | *85.3 | 97.5 | *88.3 | 100.0 | 96.6 | 93.3 |
| Local class | 80.1 | 87.2 | 84.2 | 85.6 | 82.4 | 79.1 |
| External/ correspondence | 43.7 | *90.1 | 44.2 | 54.1 | 40.5 | 47.5 |

*Strategies recording 25% or more unknown outcomes, minimal (less than 20) assessments or less than 50 enrolments.

The greatest percentage of enrolments in modules where students are assessed result in a pass (see table 2). Here also the margins between the MPR rates are not substantial. This is the case for all delivery strategies with the exception of the external/correspondence delivery strategy. This strategy is the poorest MPR performer for five out of the six discipline groupings where it delivers MPRs which are substantially below, and in the great majority of cases at half the rate delivered by other strategies. Delivery by the external/correspondence mode represents the most flexible of all the strategies in that students can decide for themselves where, how and when they decide to study, sit for exams and do assignments. It is telling that this flexibility does not seem to improve the likelihood of passing for substantial numbers of students using this method in many of the discipline groupings examined.

A better way to view the data in table 1 is to group MPRs into similar bands of performance. This can be accomplished by ranking MPRs according to delivery strategy within each of the discipline groupings. The delivery strategy which produces the highest MPR would comprise band 1, the one which produces the second highest MPR would comprise band 2, and so on. Results which are within one, two and three percentage points of each other would fall into the same band. However, the bands may tend to hide the extent of the differences in terms of MPRs. A breakdown of this ranking is provided in table 3.

It is evident from tables 2 and 3 that there is no one consistent strategy for delivering the best outcomes for all discipline groupings. Across and within discipline groupings, delivery strategies which have different levels of flexibility, structure and teacher direction seem to occupy similar bands of performance. However the external/correspondence delivery strategy is the poorest MPR performer in five out of the six discipline groupings. The local class delivery strategy also accounts for the second lowest or lowest scores within five out of the six discipline groupings. There are no other meaningful differences between the performances of the remaining strategies.

**Table 3: Module pass rate banded according to discipline grouping and delivery strategy**

| | Accounting | Commercial cookery | Computing | Hospitality | Civil engineering | Electronic engineering |
|---|---|---|---|---|---|---|
| Band 1 | | | | | | |
| | Remote class | Self-paced scheduled<br>Self-paced unscheduled | Workplace/ experiential | Self-paced unscheduled | Remote class<br>Mixed | Other |
| Band 2 | | | | | | |
| | Self-paced scheduled<br>Workplace/ experiential*<br>Mixed<br>Other | Remote class<br>External/ correspon-dence*<br>Workplace/ experiential<br>Other | Remote class<br>Mixed*<br>Other | Remote class*<br>Workplace/ experiential* | Self-paced unscheduled | Self-paced unscheduled<br>Mixed |
| Band 3 | | | | | | |
| | Local class<br>Self-paced unscheduled* | Local class | Self-paced unscheduled* | Self-paced scheduled<br>Mixed*<br>Other | Workplace/ experiential* | Remote class<br>Workplace/ experiential |
| Band 4 | | | | | | |
| | External/ correspon-dence | Mixed* | Local class<br>Self-paced scheduled | Local class | Other<br>Self-paced scheduled | Local class |
| Band 5 | | | | | | |
| | | | External/ correspon-dence | External/ correspon-dence | Local class | Self-paced scheduled |
| Band 6 | | | | | | |
| | | | | | External/ correspon-dence | External/ correspon-dence |

*Strategies recording 25% or more unknown outcomes, minimal (less than 20) assessments or less than 50 enrolments.

## Full-time and part-time workers

MPRs were computed for enrolments by full-time and part-time workers. Based on the MPRs there was no one strategy that produced the highest scores across the discipline groupings for part-time workers but the external/correspondence delivery strategy produced the lowest MPRs for part-time workers across all the discipline groupings with sufficient numbers for meaningful analysis. Similar results were found for full-time workers. Here the external/correspondence strategy produced the lowest MPRs in the discipline groupings with sufficient numbers for meaningful analysis. A breakdown of these data presented in terms of MPR scores is presented in appendix D.

## Male and female students

MPRs were also computed for male and female students. For males the external/ correspondence mode of delivery produced the lowest MPR scores for all discipline groupings with sufficient numbers for meaningful analysis. This was also the case for females in all of the discipline groupings with sufficient numbers for meaningful analysis. A breakdown of these data presented in terms of MPR scores is presented in appendix E.



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## Students of different age groups

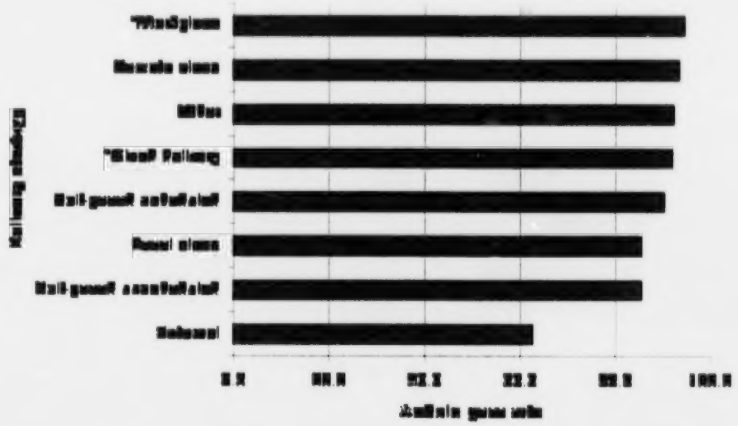
MPRs have also been computed for each of the four age groups examined. These showed that for those age groups with sufficient numbers for meaningful analysis, the external/correspondence delivery strategy generally performed at the lower bands of performance. The one exception was for the 15–17-year-olds in accounting. Here it performed in the second to lowest band of performance.

These MPR scores for the different age groups are provided in appendix F.

## All 1997 VET students

When module pass rates were computed for all VET students regardless of discipline grouping the findings show that most strategies produce pass rates which are over 80 per cent. The pass rates for the external/correspondence delivery strategy were substantially below this figure. Five out of the eight delivery strategies outperformed the local class strategy. This means that five out of the seven alternative delivery strategies are outperforming the local class strategy. Figure 2 provides a pictorial representation of the module pass rates derived by the different delivery strategies.

**Figure 2: Module pass rate by delivery strategy for all 1997 VET students**



*Denotes strategies with 25% or more unknown outcomes.

## Withdrew–failed outcomes

Withdrew–failed outcomes describe results which are incurred when students do not withdraw from a module in the prescribed period for withdrawals. The module pass rate already described can mask the effect of having a large proportion of *withdraw–failed* outcomes within a particular strategy and within a particular discipline grouping. When withdrew–failed outcomes are examined separately for each discipline grouping we find that about a third of the external delivery strategy enrolments for all discipline groupings apart from commercial cookery result in a withdrew–fail outcome. The local class and self-paced scheduled strategies also recorded substantial proportions of withdrew–failed outcomes. However these were only about a fifth of those recorded by the external/correspondence delivery strategy. A breakdown of these data appear in table 4.

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**Table 4: Withdrew–failed outcomes by discipline grouping and delivery strategy**

| | Accounting | Commercial cookery | Computing | Hospitality | Civil engineering | Electronic engineering |
|---|---|---|---|---|---|---|
| Local class (face to face) | 6.5 | 5.1 | 6.0 | 4.5 | 5.1 | 5.0 |
| Remote class | 0.5 | 4.7 | 0.6 | 1.1 | - | - |
| Self-paced (scheduled) | 4.1 | 1.6 | 4.2 | 4.3 | 4.2 | 5.4 |
| Self-paced (unscheduled) | 2.4 | - | 1.1 | - | 2.6 | 5.2 |
| External/ correspondence | 28.2 | - | 39.2 | 35.6 | 35.4 | 31.0 |
| Workplace/ experiential | 2.1 | 1.3 | 1.3 | - | 0.8 | - |
| Mixed | 1.4 | 0.8 | 1.2 | 1.6 | - | 1.2 |
| Other | 2.4 | 1.1 | 2.2 | 3.0 | 1.4 | 0.7 |

## Indicators of performance—student-assessed pass rates

If only those instances where an assessment has been undertaken (that is, excluding withdrew–fail outcomes) are considered, and from that we look at the percentage of passes from these assessments, then this can be called a student-assessed pass rate (SAPR). We now find that all strategies are able to deliver pass rates which are over 90 per cent in one or more discipline groupings, and almost all strategies deliver pass rates which are 75 per cent and over for all discipline groups. The one exception (delivering a pass rate of well under 50%) is the *other* delivery strategy for civil engineering. Taken as a whole this means that the great majority of enrolments in which students are assessed result in a pass. These data are presented in table 5 (see page 10).

SAPRs can also be grouped together under bands of performance as has been done for the module pass rates. These are presented in table 6 (see page 11).

It is difficult to make any meaningful conclusions about the effects of different delivery strategies in delivering student outcomes. However the strong performance of the workplace experiential delivery strategy is highlighted for four out of the six delivery strategies.

**Table 5: Module assessments and SAPRs for all delivery strategies**

| | Accounting | | Commercial cookery | | Computing | | Hospitality | | Civil engineering | | Electronic engineering | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Assessments | SAPR % | Assessments | SAPR % | Assessments | SAPR % | Assessments | SAPR % | Assessments | SAPR % | Assessments | SAPR % |
| Local class (face to face) | 142 975 | 85.4 | 67 870 | 90.5 | 544 137 | 89.5 | 260 967 | 87.7 | 16 138 | 86.3 | 58 445 | 84.2 |
| Remote class | 98 | 99.0 | 197 | 88.3 | 2 895 | 78.4 | 1 829 | *82.7 | 301 | 100.0 | 180 | 83.9 |
| Self-paced (scheduled) | 8 378 | 84.2 | 480 | 92.3 | 37 672 | 84.2 | 2 045 | 86.4 | 526 | 92.2 | 2 080 | 80.8 |
| Self-paced (unscheduled) | 716 | *86.6 | 40 | 97.5 | 6 889 | *75.9 | 510 | 84.1 | 61 | 91.8 | 112 | 100.0 |
| External/ correspondence | 5 801 | 81.0 | 136 | *80.1 | 10 303 | 91.1 | 1 251 | 89.0 | 234 | 97.0 | 327 | 84.7 |
| Workplace/ experiential | 213 | *99.5 | 1 094 | 91.0 | 1 186 | 98.8 | 1 765 | *93.5 | 26 | *92.3 | 58 | 86.2 |
| Mixed | 3 124 | 92.9 | 1 854 | *78.2 | 7 938 | *94.8 | 7 804 | *92.1 | 432 | 99.1 | 189 | 81.5 |
| Other | 2 884 | 78.7 | 443 | 81.9 | 7 982 | 84.7 | 8 551 | 84.2 | 57 | 42.1 | 1 924 | 94.5 |

*Strategies recording 25% or more unknown outcomes, minimal (less than 20) assessments or less than 50 enrolments.

**Table 6: Student-assessed pass rate banded according to discipline grouping and delivery strategy**

| | Accounting | Commercial cookery | Computing | Hospitality | Civil engineering | Electronic engineering |
|---|---|---|---|---|---|---|
| Band 1 | | | | | | |
| | Remote class<br>Workplace/ experiential* | Workplace/ experiential<br>Local class<br>Self-paced/ scheduled | Workplace/ experiential | Workplace/ experiential*<br>Mixed* | Remote class<br>Mixed<br>External correspon-dence | Self-paced unscheduled |
| Band 2 | | | | | | |
| | Mixed | Remote class | Mixed* | External/ correspon-dence<br>Local class<br>Self-paced scheduled | Self-paced scheduled<br>Self-paced unscheduled<br>Workplace/ experiential* | Other |
| Band 3 | | | | | | |
| | Self-paced unscheduled*<br>Local class<br>Self-paced scheduled | External/ correspon-dence*<br>Mixed*<br>Other | External/ correspon-dence<br>Local class<br>Self-paced scheduled | Self-paced unscheduled<br>Remote class*<br>Other | Local class | Local class<br>Remote class<br>External/ correspon-dence<br>Workplace/ experiential |
| Band 4 | | | | | | |
| | External/ correspon-dence | | Other | | Other | Mixed<br>Self-paced scheduled |
| Band 5 | | | | | | |
| | | | Remote class<br>Self-paced unscheduled* | | | |

*Strategies recording 25% or more unknown outcomes, minimal (less than 20) assessments or less than 50 enrolments.

## All 1997 VET students

SAPRs were also computed for all VET students regardless of discipline grouping. The results indicate that the external delivery strategy can perform among the top bands of performance. The local class delivery strategy continues to operate at the mid-range bands of performance with four out of the seven alternative delivery strategies producing better SAPRs. However the self-paced unscheduled strategy is the lowest performer of all the strategies when assessments are taken. Figure 3 provides a pictorial representation of the student-assessed pass rates provided by the different delivery strategies.

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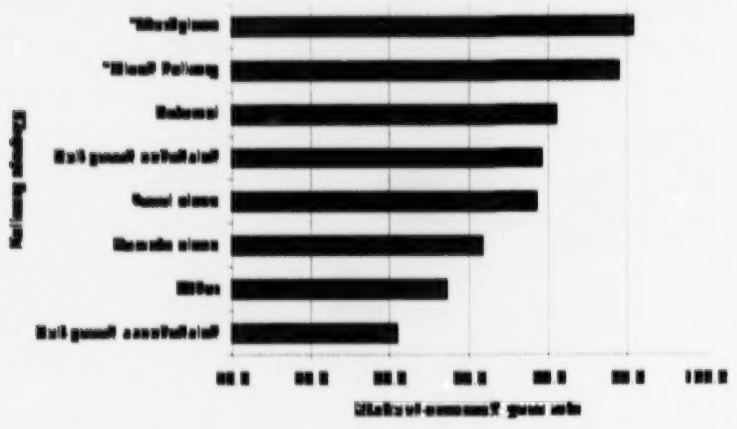
**Figure 3: Student-assessed pass rates by delivery strategy for all 1997 VET students**



*Denotes strategies with 25% or more unknown outcomes.

## Indicators of performance—module completion rates

### All students within six discipline groupings

Another indicator of the effectiveness of different delivery strategies is the rate at which students complete their courses. The rate computed using this formula has been called the module completion rate (MCR).

The MCRs for each discipline grouping have been computed for all delivery strategies and indicate that the external/correspondence strategy performs in the lowest bands of performance for all groups apart from commercial cookery. The self-paced unscheduled strategy is also a poor performer for accounting and computing. A breakdown of these data appears in table 7.

**Table 7: Module completion rates according to discipline groupings and delivery strategy**

| Delivery strategies | Discipline groupings | | | | | |
|---|---|---|---|---|---|---|
| | Accounting | Commercial cookery | Computing | Hospitality | Civil engineering | Electronic engineering |
| Remote class | 92.5 | 81.6 | 82.0 | *81.3 | 100.0 | 78.2 |
| Workplace/experiential | *88.4 | 72.6 | 94.1 | *85.2 | *85.7 | 84.7 |
| Local class | 80.1 | 82.1 | 78.9 | 80.9 | 78.9 | 74.4 |
| Other | 79.0 | 78.3 | 82.9 | 80.1 | 85.7 | 93.4 |
| Mixed | 78.7 | *67.8 | *87.4 | *76.9 | 95.3 | 91.8 |
| Self-paced scheduled | 77.9 | 90.2 | 79.5 | 82.5 | 86.1 | 71.3 |
| External/correspondence | 41.4 | *75.8 | *43.5 | 51.2 | 40.2 | 46.4 |
| Self-paced unscheduled | *6.0 | 100.0 | 66.9 | 78.8 | 88.9 | 86.8 |

*Strategies recording 25% or more unknown outcomes, minimal (less than 20) assessments or less than 50 enrolments.

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Within each grouping, however, there are some definite differences. These differences can be observed by ranking delivery strategies according to their MCR score and placing these rankings into bands. The data indicate that there is no one strategy that consistently provides the best outcomes. What it does indicate, however, is that the external/correspondence delivery strategy is never found among the top two bands and is generally found in the lower bands. Table 8 provides a description of MCRs grouped according to bands within each discipline grouping.

**Table 8: Module completion rate by discipline groupings and by delivery strategies**

| Accounting | Commercial cookery | Computing | Hospitality | Civil engineering | Electronic engineering |
|---|---|---|---|---|---|
| **Band 1** | | | | | |
| Remote class | Self-paced unscheduled | Workplace/ experiential | Workplace/ experiential | Remote class | Other<br>Mixed |
| **Band 2** | | | | | |
| Workplace/ experiential* | Self-paced scheduled | Mixed* | Local class<br>Remote class*<br>Self-paced scheduled<br>Other<br>Self-paced unscheduled | Mixed | Self-paced unscheduled |
| **Band 3** | | | | | |
| Local class<br>Mixed<br>Self-paced scheduled<br>Other | Remote class<br>Local class | Other<br>Remote<br>Self-paced scheduled | Mixed* | Self-paced unscheduled | Workplace/ experiential |
| **Band 4** | | | | | |
| External/ correspon-dence | Other | Local class | External/ correspon-dence | Workplace/ experiential*<br>Self-paced scheduled<br>Other | Remote class |
| **Band 5** | | | | | |
| Self-paced unscheduled* | External/ correspon-dence*<br>Workplace/ experiential | Self-paced unscheduled | | Local class | Self-paced Scheduled<br>Local class |
| **Band 6** | | | | | |
| | Mixed* | External/ correspon-dence* | | External/ correspon-dence | External/ correspon-dence |

*Strategies recording 25% or more unknown outcomes, minimal assessments or less than 50 enrolments.

*Module completion rate: All passes and satisfactory completions (01, 04) are added and then taken as a percentage of all enrolments minus those outcomes which describe studies which have not yet been completed and are continuing (05), where status has been granted through credit transfer (09) and recognition of prior learning processes (06), and any not reported outcomes (90) or missing data (blanks).*



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The banding of delivery strategies with different levels of flexibility, structure and teacher direction makes it difficult to make any meaningful deductions about the effects of specific modes of delivery. However the solid performances of many of the alternative delivery strategies (remote class, workplace experiential, mixed, self-paced scheduled and self-paced unscheduled) needs to be acknowledged.

## Full-time and part-time workers

MCRs were also computed for enrolments by students who were employed full time and those who were employed part time. These showed that the external/correspondence method of delivery produced the lowest MCRs for both sets of students across all discipline groupings with sufficient numbers for meaningful analysis. A breakdown of these data in terms of scores for the different groups appears in appendix G.

## Male and female students

MCRs were also computed for enrolments by male and female students. These showed that the external/correspondence delivery strategy produced the lowest MCR scores for both male and female students for the discipline groupings with sufficient numbers for meaningful analysis. A breakdown of these data in terms of MCR scores appears in appendix H.

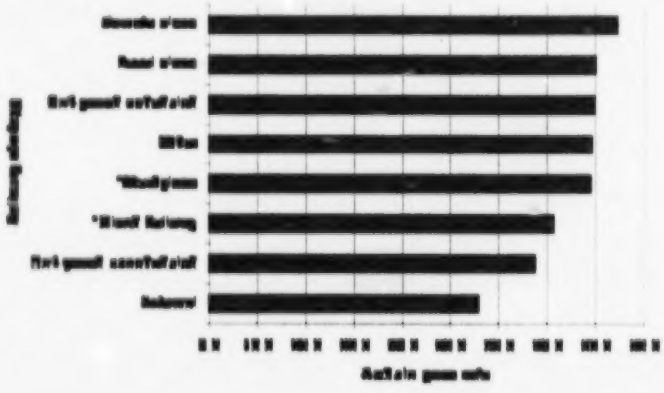
## Students of different age groups

Module completion rates were also computed for students of different age groups within each delivery strategy for each discipline grouping. These showed that for all of the discipline groupings for each age group with sufficient numbers for meaningful analysis, the external/correspondence delivery strategy was the lowest performer. A breakdown of this information in terms of MCR scores appears in appendix I.

## All 1997 VET students

MCRs were computed for all VET students regardless of discipline grouping. This showed that five out of the eight strategies produced MCRs at about the 80 per cent level. The external delivery strategy produced MCRs that were substantially below the rates of the other strategies. The top performer was the remote class delivery strategy closely followed by the local class, and self-paced scheduled strategies. This information is provided in figure 4.

**Figure 4: Module completion rates by delivery strategy for all 1997 VET students**



*Denotes strategies with 25% or more unknown outcomes.



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## Discussion and conclusions

### Module pass rates

The findings from an analysis of outcomes for all students as a whole and for those targetted discipline groupings show that alternative modes of delivery often outperform those of traditional modes of delivery. Before we can make any definite conclusions about these results it is also important to examine the ways in which assessments are carried out. It could be that test items used to assess underpinning knowledge are not sufficiently discriminating to provide an accurate judgement of students' knowledge, or that instructors are more generous with awarding a pass grade when they know that students are studying via modes which are less structured. These factors may produce an over-estimation of the strength of the delivery strategy. In addition, where students are assessed in the workplace, it is difficult to determine whether or not supervisors have been sufficiently rigorous in their judgment of competent performance. When students are assessed by their instructors, as they are more likely to be in a *local class* situation, there is an increased opportunity for instructors to have their judgments influenced by their prior knowledge of the student's performance in similar activities. In both cases these factors would make the validity of the assessment provided questionable.

It is generally believed that one of the strengths of the local class organisation is that it allows for immediate interaction between students and their peers, and students and their teachers or instructors. Another perceived strength is the opportunity it gives students to ask for clarification and assistance when they get into difficulties, and teachers and instructors an opportunity to provide assistance when they perceive students to be experiencing difficulties. These factors are especially important for students when they are developing skills or knowledge. For these reasons one would expect that this method would be able to perform at higher levels than is suggested by the data. However this does not appear to be the case. It seems that those strategies which afford some (but not absolute) flexibility in the way that study is undertaken are providing MPR scores that are often superior to those produced by the local class method. Why this should be the case may be related not so much to the effectiveness of the delivery strategy but to the characteristics of the students within the strategy in terms of ability and motivation, the characteristics of their teachers and the nature of the assessment process. This latter point will be discussed in greater detail later on.

External/correspondence methods of delivery provide opportunities for students to access training that would otherwise be denied them because of their work commitments or geographical isolation. It is generally felt that this is one of its greatest strengths. In addition, the study materials made available to external students are also felt to allow them to access texts without much difficulty. However it is also generally recognised that this type of study requires high levels of commitment, discipline and time-management skills. It could be that students who are training using external/correspondence delivery methods, although appreciating the flexibility it allows them, are finding it difficult to put in the time required to develop the knowledge and skills required for them to pass the subjects in which they are enrolled. Furthermore, it may also be that they do not have time to prepare themselves adequately for assessments and so do not do as well as they would otherwise. Another explanation may be that students have good intentions to complete the program and pass the subject and enrol in the course. These good intentions are unfortunately not followed up by consistent application.

The impact that a student's intellectual ability has on success in a course cannot be ignored. It could be that students with lower levels of ability do not choose to study via alternative modes of delivery and are more likely to be found among traditional classes.

The module pass rate is based on the number of enrolments which result in pass, fail or withdrew–failed outcomes. It is very clear that withdrew–failed outcomes are distributed more frequently within external and local class delivery strategies than other strategies. It is

for this reason that this pass rate is not always a true indication of performance and a student-assessed pass rate may provide a better indication of the strength of different modes.

## Student-assessed pass rate

The SAPR provides a different outcome for the external/correspondence delivery strategy for all VET students and across the specific discipline groupings of interest to this study. It produces pass rates which are far closer to those produced by other strategies. This means that the delivery strategy is capable of providing higher pass rates once an assessment has been taken.

## Module completion rate

Module completion rates for the external/correspondence delivery strategy are in most cases still substantially below those of other strategies. One reason for the poorer performance of the external/correspondence delivery strategies in delivering MCR outcomes for students may in part be due to the absence of strict timelines for the completion of studies. Strict timelines for the completion of work may provide an organisational aid to students and help them to discipline themselves to complete their subjects. Because students choosing to study via the external/correspondence forms of delivery require a degree of self-discipline, it may be more difficult for those who are not self-starters to make themselves complete their work.

## Conclusion

There are many reasons which may account for a student's academic success or probability of passing a course. This means that although it is quite straightforward to produce tables of module outcomes for selected discipline groupings across the different modes of delivery, it is difficult to decide whether or not these outcomes are a direct consequence of the delivery strategy employed; that is to say, delivery strategies on their own do not produce module outcomes.

Students produce module outcomes through their completion of assignments or other assessment requirements. To do so they are either assisted or hampered by their particular academic abilities, practical skills and preferences for learning. They can either be assisted by instructors with the skills to provide the necessary training, or hampered by instructors who may be new to the subject area and to teaching. They may be assisted by undergoing appropriate induction activities to help prepare them for studying according to a particular strategy, or they may be hampered by not undergoing this type of induction. They may be assisted by having access to appropriate resources and equipment or hampered by lack of these resources. They may be assisted by having few external commitments to interfere with studies or hampered by having many of these commitments. They may be assisted by assessment practices biased in their favour or hampered by those biased against them. Therefore it is necessary to go beyond the mapping of outcomes in order to understand why it is that some strategies are performing better than others. This can be done by more qualitative studies of students and their teachers. In part 2 of this report we examine the experiences of students according to their responses to a questionnaire survey.

Another consideration that must be taken into account is the reliability of the data on module outcomes. Training providers provide information on these module outcomes to national authorities. To do this they may be assisted by having the time, staff and other resources to ensure that their data truly reflect what is happening in their colleges according to the AVETMIS standard, or they may be hampered in their endeavour by not having this assistance. In addition, training providers may have other administrative reasons for reporting module outcomes in certain ways.

# Part 2: The perspective of students—survey findings

In this section the findings of the student survey are reported. The survey results provide an insight into the profile of students undertaking the different modes of delivery, and how students experienced and evaluated the methods they had experienced.

## Respondents

There were 769 students who responded to the survey. Of these, 46.4 per cent (n=357) were taught by flexible delivery or alternative methods of instruction and 53.6 per cent (n=412) were taught by teacher-directed or traditional face-to-face teacher-directed methods of instruction. There were more females (57.3%) than males (42.7%) in the flexible delivery group. In the traditional face-to-face group the situation was reversed. Here males (68.9%) more than doubled the number of females (31.1%).

Respondents were divided according to delivery strategies within particular modules. Information was obtained from teachers who had been identified by students as having taught or facilitated their particular module. This information is presented in table 9. Students studying under flexible delivery strategies are compared with students studying under traditional delivery strategies. Comparisons for particular modules are also reported.

**Table 9: Number of respondents according to delivery strategy and module completed**

| Module name | Face-to-face | Work-based | Flexible delivery | External/ correspondence | Video conference | Total |
|---|---|---|---|---|---|---|
| Accounting to trial balance/accounting 1 | 47 | - | 53 | 60 | 15 | **175** |
| Principles and methods of commercial cookery | 128 | 5 | - | - | - | **133** |
| Hospitality essentials | 62 | - | 30 | 35 | - | **127** |
| Introduction to the internet/internet fundamentals | 19 | - | 47 | - | - | **66** |
| Engineering drawing interpretation | 68 | - | 14 | 5 | - | **87** |
| Micro-processing fundamentals | 55 | - | 12 | - | - | **67** |
| Product control | 3 | 1 | - | - | - | **4** |
| Spreadsheets 1 | 30 | - | 53 | 27 | - | **110** |
| **Total** | **412** | **6** | **134** | **127** | **15** | **769** |

For the purposes of this study, the term 'traditional delivery' is used for the face-to-face strategies; the term 'flexible delivery' is used for all other delivery strategies combined.

## Age

The average age of the group was 27.7 years. The ages of the flexible delivery students ranged from 16 years to 76 years. The median age for this group was 31.2 years. Ages for the

traditional face-to-face students ranged from 16 years to 55 years. The median age for this group was 24.6 years.

### Employment status

Just under half (48.9%) of the flexible delivery students and just over half (61.0%) of the traditional delivery students were employed full time. About a fifth (22.6%) of the flexible delivery students were in part-time employment and just over that figure (28.6%) were in casual employment. Just under a fifth (17.1%) of the traditional delivery students were in part-time employment, and just over a fifth (21.5%) were in casual employment.

### Education

Almost three-quarters (74.0%) of the flexible delivery students had completed Year 11 with over three-quarters (78.6%) of these also having completed Year 12. The situation was similar for the traditional face-to-face students. Here 73.3 per cent had completed Year 11 with about three-quarters (77.8%) also having completed Year 12.

The most common other qualification gained was a technical and further education (TAFE) certificate. Almost three-quarters (72.9%) of flexible delivery students and about the same proportion (73.3%) of the traditional face-to-face students had been awarded a TAFE certificate.

## Distance from campus

Flexible delivery students were more likely to live slightly further distances from the college in which they were enrolled than were those being taught by traditional methods. For flexible delivery students the average distance was 100.4km; however, there was great variation (standard deviation 421.0) between them. For example, the distances ranged from 1km to 4550km with just under 75 per cent of the students living between one and 15km from the campus.

For traditional delivery students the average distance was 56.1km. There was also a great variation (standard deviation 159.1) between these students. The distances ranged from 1km to 2000km with 46.2 per cent of students living between 1 and 15km from the campus.

## Reason for choosing method of delivery

When students were asked to indicate the reasons for choosing the method of study undertaken the most frequently reported reason given by the flexible delivery students was that it fitted their lifestyle. This was followed by a perception that it was the most convenient method offered. For the traditional face-to-face students the most common reason was that the method was the only one offered. This was followed by the perception that the method helped them to understand the materials better. Where almost a third of the traditional delivery students reported choosing the particular method of study because they believed it helped them to understand the materials better, only about as many flexible delivery students identified this as a reason for choosing this method of study. A breakdown of the reasons for students choosing the particular method of instruction is presented in table 10.

**Table 10: Students' reasons for choice of instructional method**

| Reason for choice | Flexible delivery students | Traditional delivery students |
|---|---|---|
| | % of cases (n=353) | % of cases (n=401) |
| It is less work for me | 4.8 | 4.0 |
| Other various reasons | 8.2 | 6.2 |
| It is easier to learn this way | 19.3 | 22.4 |
| Fits my lifestyle | 54.4 | 23.4 |
| Helps understand the material | 16.1 | 30.7 |
| It is most convenient method | 48.7 | 32.9 |
| It is the only method offered | 36.0 | 58.6 |

## Induction

Students were asked to indicate the amount of help or advice they had received in how to learn under the method of instruction that had been used. There were no major differences in the responses of flexible delivery and traditional face-to-face students. However flexible delivery students were more likely to say that they had been given a great deal of help than the traditional delivery students. In addition, a greater percentage of traditional delivery students reported having received no help at all.

When the responses from those who reported that they had received an adequate amount of help are combined with those who reported receiving a great deal of help, flexible delivery students indicated that they received more help. These data are presented in table 11.

**Table 11: Students' reports of the amount of help or advice given them prior to commencing their studies—percentage of students**

| Amount of help or advice | Flexible delivery students | Traditional delivery students |
|---|---|---|
| | % of cases (n=346) | % of cases (n=378) |
| Just a little help | 11.6 | 9.5 |
| An adequate amount of help | 15.0 | 17.2 |
| Neutral | 17.9 | 17.2 |
| No help at all | 22.5 | 28.0 |
| A great deal of help | 32.9 | 28.0 |

## Preparing students for learning

### Explaining processes, resources and training techniques

Students were asked whether or not they had been given explanations of training techniques and assessment methods. It was evident that explanations detailing requirements for assessments and assignments were far more likely to be given to students than those concerned with the process of learning. This was generally true for both groups of students. A breakdown of these data appears in table 12.

**Table 12: Students' reports of the extent to which explanations were provided about methods and outcomes—percentage of students**

| Explanations given students | Flexible delivery students | | | Traditional delivery students | | |
|---|---|---|---|---|---|---|
| | No extent | Some extent | Great extent | No extent | Some extent | Great extent |
| Assessment requirements | 6.6 | 38.7 | 54.7 | 1.5 | 39.4 | 59.2 |
| Learning tasks | 9.1 | 42.5 | 48.4 | 4.4 | 44.5 | 51.1 |
| Assignments | 8.9 | 38.3 | 52.9 | 5.1 | 46.9 | 48.0 |
| Learning outcomes | 8.5 | 44.2 | 47.3 | 2.5 | 50.2 | 47.3 |
| Learning resources | 8.8 | 50.4 | 40.7 | 8.2 | 54.5 | 37.4 |
| Study skills | 16.0 | 55.0 | 28.9 | 13.5 | 56.4 | 30.0 |
| Learning methods prior to commencement of module | 15.7 | 56.3 | 28.0 | 20.0 | 59.4 | 20.7 |

## Availability of resources and support

Students in both groups generally reported that teacher support and other required resources had generally been made available to them. Moreover, more than half of the students in both groups reported that these resources had been available to a great extent. However flexible delivery students were more likely to report a higher level of resource availability than traditional delivery students. A breakdown of these data appears in table 13.

**Table 13: Availability of resources and teacher support—percentage of students**

| Resources and support | Flexible delivery students | | | Traditional delivery students | | |
|---|---|---|---|---|---|---|
| | No extent | Some extent | Great extent | No extent | Some extent | Great extent |
| Teacher support available when needed | 3.7 | 38.7 | 57.6 | 4.4 | 36.7 | 58.9 |
| Resources made available | 6.8 | 45.0 | 48.2 | 5.0 | 44.0 | 41.0 |

## Organisation and structure of learning activities

Students were asked to what extent their particular module had been well planned and structured, and whether tasks had been related to the learning outcomes. The majority of students in both groups indicated that the module had been well structured in terms of learning activities, clearly organised module content and relationship of tasks to learning outcomes. This was the case for both groups. However flexible delivery students were more likely to report higher levels of provision. Few students in both groups indicated that these processes had not been available. Table 14 reports these data.

**Table 14: Students' evaluation of adequacy of learning activities and assessment tasks, and content structure provided in their modules—percentage of students**

| Evaluation | Flexible delivery students | | | Traditional delivery students | | |
|---|---|---|---|---|---|---|
| | No extent | Some extent | Great extent | No extent | Some extent | Great extent |
| Assessment tasks were related to module requirements | 0.9 | 24.8 | 74.4 | 2.5 | 38.0 | 59.6 |
| Well-planned learning activities | 5.7 | 40.3 | 54.0 | 5.4 | 44.8 | 49.8 |
| Clearly structured module content | 3.4 | 39.6 | 57.0 | 3.5 | 47.2 | 49.4 |

## Opportunity to practise study skills and individualise study

The opportunity to practise the appropriate study skills and to self-assess progress in the module was, however, less widespread. This was the case for both flexible delivery students and traditional delivery students. Flexible delivery students were more than twice as likely to display differences in reporting an increased amount of opportunity being given to them to self-pace their learning, and assess their progress in the module than were traditional delivery students. These data appear in table 15.

**Table 15: Students' assessment of the extent to which they had been given opportunities to practise skills, and individualise study and assessment—percentage of students**

| Assessment | Flexible delivery students | | | Traditional delivery students | | |
|---|---|---|---|---|---|---|
| | No extent | Some extent | Great extent | No extent | Some extent | Great extent |
| Opportunity to practise skills | 18.2 | 41.8 | 40.1 | 13.4 | 46.8 | 39.9 |
| Opportunity to self-pace study | 4.5 | 23.2 | 72.2 | 14.7 | 53.6 | 31.7 |
| Opportunity to assess own progress | 8.0 | 46.4 | 45.6 | 13.4 | 54.0 | 32.6 |

## Time spent on studies

Students reported spending an average of 7.1 hours per week on their studies with half of the students spending between one and five hours on their studies. Flexible delivery students reported allocating an average of 7.3 hours per week to their studies and traditional delivery students reported allocating an average of 6.7 hours per week to their studies. There were no statistically significant differences at the .01 level of significance between the two groups.

## Self-ratings of individual cognitive and practical abilities

Students were asked to provide a rating of their mechanical skills and abilities in reading, mathematics, problem-solving, computing, spoken and written language in relation to the demands of the module they had completed. These ratings for flexible and traditional face-to-face students are presented in table 16 (see page 23).

Notably, few students rate themselves in the 'below average' categories. This is the case for flexible delivery students and traditional delivery students. Kolmogorov Smirnov two-sample tests failed to yield any significant differences in the way students rated their various cognitive and practical abilities.

Nevertheless, if we consider only the 'well above average' categories, then flexible delivery students were consistently more likely to rate themselves at this level at a slightly higher rate than were the traditional delivery students. If we consider the below average categories then traditional delivery students were more likely to rate themselves at this level at higher rates than flexible delivery students on all items apart from mechanical ability.

## Learning preferences

Students were asked to indicate the extent to which they learned best using a variety of learning styles. For traditional delivery students, the style which was preferred by the greatest percentage of students was that of learning from a lecturer in a traditional face-to-face classroom. The next most preferred method was that of looking at pictures and diagrams which help to explain concepts. For flexible delivery students the most preferred style was individual learning with text books and study guides. The next most preferred learning style was learning from a lecturer in a traditional classroom. Watching videos and listening to

audio tapes was the least preferred style for both flexible and traditional delivery students. A breakdown of this information appears in table 17.

Students also reported just over 90 other types of preferred learning styles. In the main these styles dealt with a variation of the major styles reported in table 17. They dealt mainly with increased teacher support, demonstration of specific examples, and extended practice.

## Problems and concerns

Students were asked to indicate the extent to which they found it difficult to follow instructions for practical sessions, contact instructors when having problems, complete assignments when they were due and fit in studies with family and work obligations. For flexible delivery students the most common problem was making enough time to study. This was followed by concerns about fitting in family obligations with study. For traditional delivery students the most common concern was completing assignments to meet deadlines followed by making enough time to study. However, about the same proportion of both groups of students identified making enough time to study as a concern. Table 18 presents these data.

## Access to materials and equipment

Students were asked how easy it had been for them to locate reference material required to complete assignments. Only a small percentage of students from both groups indicated that it had not been easy to do this. Similar results were obtained when students were asked whether it had been easy for them to access equipment they required to learn and practise skills. These data are presented in table 19.

## Understanding study materials

Few students indicated that it was not easy to understand study texts, study guides, or instructions within these texts and study guides. However flexible delivery students were more likely than traditional delivery students to agree that it had been easy to perform these activities. These data appear in table 20.

## Effectiveness of method of instruction

Students were asked to evaluate the method of instruction in relation to the way it helped them to understand the subject matter, complete course requirements, practise skills required and have ready access to instructors. They were also asked whether the method suited their lifestyle, and suited the module undertaken. There were generally no major differences between the two groups. Flexible delivery students, however, were far more likely to say that the course suited their lifestyle than were traditional delivery students. They were also more likely to indicate that the method experienced did not help them to understand the material, practise skills required, and have ready access to instructors. These data are presented in table 21.

**Table 16: Students self-ratings of individual cognitive and practical ability—percentage of students**

| | Flexible delivery | | | | | | Traditional delivery | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Well above average | Above average | Average | Below average | N/A | Total | Well above average | Above average | Average | Below average | N/A | Total |
| Reading | 27.2 | 40.2 | 29.7 | 2.8 | 0.1 | **100** | 20.7 | 38.3 | 35.6 | 4.9 | 0.5 | **100** |
| Spoken language | 23.8 | 29.7 | 32.9 | 4.3 | 9.3 | **100** | 20.0 | 32.2 | 37.6 | 5.5 | 4.7 | **100** |
| Computing | 21.0 | 27.6 | 34.1 | 7.4 | 9.9 | **100** | 14.4 | 27.4 | 38.8 | 13.7 | 5.7 | **100** |
| Written language | 19.4 | 33.0 | 38.2 | 6.2 | 3.2 | **100** | 16.6 | 35.0 | 35.2 | 9.9 | 3.3 | **100** |
| Mathematics | 17.3 | 32.9 | 37.7 | 4.8 | 7.3 | **100** | 14.9 | 35.9 | 40.1 | 7.9 | 1.2 | **100** |
| Problem-solving | 17.0 | 42.5 | 36.5 | 1.7 | 2.3 | **100** | 13.3 | 40.7 | 41.7 | 3.7 | 0.6 | **100** |
| Mechanical | 15.9 | 25.6 | 35.8 | 7.1 | 15.6 | **100** | 15.7 | 35.4 | 39.2 | 4.2 | 5.5 | **100** |

**Table 17: Students' identification of preferred learning styles—percentage of students**

| Preferred styles | Flexible delivery students | | | | | Traditional delivery students | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| I learn best when: | Agree | Neutral | Disagree | N/A | Total | Agree | Neutral | Disagree | N/A | Total |
| • I study by myself with texts and study guides | 76.9 | 11.3 | 11.6 | 0.2 | **100** | 53.2 | 27.3 | 17.5 | 2.0 | **100** |
| • I learn from a lecturer in a traditional face-to face classroom | 49.4 | 18.4 | 12.5 | 19.7 | **100** | 69.0 | 22.2 | 7.1 | 1.7 | **100** |
| • I practise doing things in a practical workshop | 45.0 | 19.7 | 8.3 | 27.0 | **100** | 64.6 | 20.5 | 5.4 | 9.5 | **100** |
| • I do my own research from many different journals or books | 42.2 | 32.9 | 16.4 | 8.5 | **100** | 31.9 | 38.5 | 23.5 | 6.1 | **100** |
| • I work on a problem with other members in a group | 37.1 | 23.4 | 16.2 | 23.3 | **100** | 56.3 | 27.7 | 10.5 | 5.5 | **100** |
| • I interact with a computer in an on-line situation | 32.2 | 20.7 | 16.8 | 30.3 | **100** | 25.1 | 27.5 | 25.3 | 22.1 | **100** |
| • I watch videos or listen to audio tapes | 18.3 | 27.4 | 25.2 | 29.1 | **100** | 22.7 | 33.9 | 24.4 | 19.0 | **100** |
| • I look at pictures or diagrams which help explain concepts and processes | 57.5 | 23.2 | 8.5 | 10.8 | **100** | 65.5 | 23.6 | 5.9 | 5.0 | **100** |

**Table 18: Problems and concerns with method of delivery reported by students—percentage of students**

| Problems and concerns | Flexible delivery students | | | | | Traditional delivery students | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Agree | Neutral | Disagree | N/A | Total | Agree | Neutral | Disagree | N/A | Total |
| • Making enough time to study | 66.6 | 18.4 | 13.3 | 1.7 | 100 | 50.7 | 29.3 | 16.4 | 3.6 | 100 |
| • Fitting in family obligations with study | 59.1 | 20.9 | 13.4 | 6.6 | 100 | 44.1 | 31.1 | 16.2 | 8.6 | 100 |
| • Being disciplined enough to do study required | 56.1 | 23.1 | 19.7 | 1.1 | 100 | 46.7 | 33.0 | 17.3 | 3.0 | 100 |
| • Fitting in work obligations with study time | 53.7 | 17.0 | 10.9 | 18.4 | 100 | 44.6 | 26.9 | 15.5 | 13.0 | 100 |
| • Completing assignments to deadlines | 52.9 | 23.0 | 15.4 | 8.7 | 100 | 52.9 | 29.9 | 13.7 | 3.5 | 100 |
| • Contacting instructor when having problems | 46.1 | 27.5 | 21.5 | 4.9 | 100 | 46.7 | 31.8 | 18.8 | 2.7 | 100 |
| • Following instructions for practical sessions | 41.2 | 24.9 | 20.4 | 13.5 | 100 | 49.9 | 28.2 | 18.2 | 3.7 | 100 |

**Table 19: Students' reports of ease accessing materials and equipment—percentage of students**

| Ease of access | Flexible delivery students | | | Traditional delivery students | | |
|---|---|---|---|---|---|---|
| It was: | Agree | Neutral | Disagree | Agree | Neutral | Disagree |
| • Easy to locate reference materials required for assignments | 64.0 | 25.1 | 10.8 | 61.7 | 29.4 | 8.9 |
| • Easy to access equipment to learn and practise skills | 59.5 | 31.5 | 8.9 | 62.3 | 27.7 | 9.9 |

**Table 20: Students' evaluations of extent to which it had been easy to understand learning materials—percentage of students**

| Evaluations | Flexible delivery students | | | | | Traditional delivery students | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| It was: | Agree | Neutral | Disagree | N/A | Total | Agree | Neutral | Disagree | N/A | Total |
| • Easy to follow instructions in study guides | 72.9 | 20.6 | 6.6 | 0.0 | **100** | 66.0 | 27.5 | 6.4 | 0.1 | **100** |
| • Easy to understand study guides | 70.3 | 24.0 | 5.7 | 0.0 | **100** | 65.9 | 27.7 | 6.5 | 0.0 | **100** |
| • Easy to understand text books | 69.4 | 22.3 | 8.4 | 0.0 | **100** | 62.1 | 29.5 | 8.4 | 0.0 | **100** |
| • Easy to follow instructions in text books | 69.1 | 23.5 | 7.4 | 0.0 | **100** | 61.8 | 30.3 | 7.9 | 0.0 | **100** |

**Table 21: Students' perceptions of effectiveness of delivery strategy used in their training—percentage of students**

| Perceptions | Flexible delivery students | | | | | Traditional delivery students | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| The way this subject is taught: | Agree | Neutral | Disagree | N/A | Total | Agree | Neutral | Disagree | N/A | Total |
| • Helps me to understand the subject material | 74.2 | 17.6 | 7.3 | 0.9 | **100** | 74.7 | 21.3 | 2.9 | 1.1 | **100** |
| • Allows me to complete course requirements | 82.1 | 12.3 | 5.4 | 0.2 | **100** | 76.5 | 18.8 | 4.0 | 0.7 | **100** |
| • Suits my lifestyle | 73.5 | 18.3 | 6.0 | 2.2 | **100** | 49.9 | 35.9 | 10.9 | 3.3 | **100** |
| • Helps me to practise the skills required | 66.2 | 23.3 | 8.8 | 1.7 | **100** | 69.9 | 22.9 | 5.7 | 1.5 | **100** |
| • Allows me to have ready access to the instructor | 54.8 | 28.3 | 13.4 | 3.5 | **100** | 61.6 | 27.5 | 9.7 | 1.2 | **100** |
| • Is suitable for this module | 75.4 | 13.5 | 11.2 | -0.1 | **100** | 68.6 | 25.7 | 5.7 | 0.0 | **100** |

**Table 22: Students' satisfaction with method of instruction—percentage of students**

| Satisfaction | Flexible delivery students | | | | | Traditional delivery students | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Agree | Neutral | Disagree | N/A | Total | Agree | Neutral | Disagree | N/A | Total |
| • I look forward to my study sessions | 60.7 | 28.4 | 10.9 | 0.0 | **100** | 50.7 | 33.7 | 15.7 | 0.0 | **100** |
| • I look forward to preparing my assignments | 60.6 | 31.9 | 7.4 | 0.1 | **100** | 39.2 | 40.6 | 20.2 | 0.0 | **100** |
| • I look forward to doing my assessments | 56.8 | 33.4 | 9.8 | 0.0 | **100** | 35.5 | 40.4 | 24.1 | 0.0 | **100** |
| • I would recommend this subject to other students | 76.5 | 17.2 | 6.3 | 0.0 | **100** | 59.6 | 33.2 | 7.2 | 0.0 | **100** |
| • I would recommend this method of learning to other students | 71.3 | 16.6 | 12 | 0.1 | **100** | 63.8 | 30.4 | 5.7 | 0.1 | **100** |

## Satisfaction with method of instruction

Students were asked to rate the extent to which they looked forward to study sessions, preparing assignments, and doing assessments. They were also asked how far they would recommend this subject and the method of learning to other students. Flexible delivery students were more likely to say that they looked forward to their study sessions and to preparing their assignments than were traditional delivery students. They were also more likely to say that they looked forward to doing assessments, and would recommend this subject and this method of learning to other students than were traditional delivery students. These data appear in table 22 (see page 25).

Spearman-rank correlation coefficients were computed to examine the relationship between age and satisfaction measures. There was a statistically significant, moderate and positive relationship between age and looking forward to study sessions and preparing assignments. This means that older students were more likely to provide high levels of agreement with the statements and younger students were more likely to report lower levels of agreement. However there were no statistically significant relationships between age and any of the other statements in table 22. There were also no statistically significant relationships between gender and any of these variables.

## Advantages and disadvantages of method of instruction

### Advantages

Students were asked to report on the advantages of the way they had been taught in the module. They reported about 27 different types of advantages. For flexible delivery students, the most frequently reported advantage was the ability to self-pace their study program. This was followed by the opportunity it gave them to study at times which suited them. Also frequently reported was the support they received from tutors or teachers. For traditional delivery students the most frequently reported advantage was the face-to-face contact with instructors and the support available from teachers. Also frequently reported was the opportunity it gave them to practise and develop skills. Table 23 groups similar advantages under major headings. Advantages related to the flexibility of the program are the most prominent for flexible delivery students, while advantages from face-to-face contact feature most prominently for traditional delivery students. It is interesting to note that where almost half of traditional delivery students reported advantages of the method of instruction in terms of its success in delivering outcomes, this is only reported by just over ten per cent of flexible delivery students.

This would suggest that the method is important to flexible delivery students because of the flexibility it offers rather than the outcomes it produces.

**Table 23: Advantages of instructional method as perceived by students**

| Advantages | Flexible delivery students | | Traditional delivery students | |
|---|---|---|---|---|
| | No. of cases | % of respondents (n=259) | No. of cases | % of respondents (n=268) |
| **Flexibility** | | | | |
| • Study when it suits | 104 | 40.2 | 11 | 4.1 |
| • Flexible arrangements | 43 | 16.6 | 5 | 1.9 |
| • Ability to resubmit work | 6 | 2.3 | 0 | 0.0 |
| • Ability to self-pace study | 113 | 43.6 | 4 | 1.5 |
| • Recognition of prior learning | 5 | 1.9 | 1 | 0.4 |
| • More comfortable way of learning | 1 | 0.4 | | |
| • Work at own pace after introductory lecture | 3 | 1.2 | 1 | 0.4 |
| **Total** | **275** | **106.2** | **22** | **8.3** |
| **Personal contact** | | | | |
| • Support from teachers | 39 | 15.1 | 70 | 26.1 |
| • Face-to-face method | 14 | 5.4 | 95 | 35.4 |
| • Contact with other students | 8 | 3.1 | 38 | 14.2 |
| • Depends on nature of lecturer | 0 | 0.0 | 2 | 0.7 |
| **Total** | **61** | **23.6** | **205** | **76.5** |
| **Access to learning** | | | | |
| • Access to study | 14 | 5.4 | 1 | 0.4 |
| • Access to equipment | 12 | 4.6 | 15 | 5.6 |
| • Clarity of study guides and materials | 29 | 11.2 | 17 | 6.3 |
| • Clarity of instructions | 4 | 1.5 | 29 | 10.8 |
| **Total** | **59** | **22.8** | **62** | **23.1** |
| **Success/learning outcomes** | | | | |
| • Opportunity to practise skills | 9 | 3.5 | 42 | 15.7 |
| • Improved knowledge and understanding | 18 | 6.9 | 77 | 28.7 |
| • Improved confidence and motivation | 2 | 0.8 | 1 | 0.4 |
| • Comprehensive approach | 1 | 0.4 | 1 | 0.4 |
| • Improved ability to get a job | 3 | 1.2 | 2 | 0.7 |
| **Total** | **33** | **12.7** | **123** | **45.9** |
| **Efficient use of cost and time** | | | | |
| • Cost-effective | 9 | 3.5 | 1 | 0.4 |
| • Eliminates travelling | 9 | 3.5 | 0 | 0.0 |
| • Efficient use of time | 11 | 4.2 | 6 | 2.2 |
| **Total** | **29** | **11.2** | **7** | **6.2** |
| **Effective structure** | | | | |
| • Alternation of theory and practical | 2 | 0.8 | 5 | 1.9 |
| • Mid-semester break | 1 | 0.4 | 1 | 0.4 |
| • Core delivery method | 1 | 0.4 | 1 | 0.4 |
| • The structure | 0 | 0.0 | 2 | 0.7 |
| **Total** | **4** | **1.5** | **9** | **3.4** |

## Disadvantages

Students were asked to identify the disadvantages of the way the module was taught. Almost half of the flexible delivery students reported issues related to lack of interaction with teachers and with other students as a major disadvantage. The next most frequently reported issue was related to the self-discipline that was required to get things done. The most common disadvantage identified by traditional delivery students was the time pressures experienced in getting everything done. This was followed by disadvantages related to ineffective teaching practices. Their responses are presented in table 24.

**Table 24: Disadvantages of instructional method as reported by students**

| Disadvantages | Flexible delivery students | | Traditional students | |
|---|---|---|---|---|
| | No. of cases | % of respondents (n=240) | No. of cases | % of respondents (n=178) |
| Lack of interaction | 83 | 34.6 | 22 | 12.4 |
| • No ready access to instructor if having difficulties | | | | |
| • Lack of interaction with students and teachers | 33 | 13.8 | 3 | 1.7 |
| **Total** | **116** | **47.4** | **25** | **14.0** |
| Personal issues | | | | |
| • Self-conscious on video | 2 | *0.0 | 0 | 0.0 |
| • Requires discipline | 60 | 25.0 | 9 | 5.1 |
| **Total** | **62** | **25.8** | **9** | **5.1** |
| Ineffective teaching processes | | | | |
| • Does not cater for students of different levels and abilities | 5 | 2.1 | 16 | 9.0 |
| • Does not provide interesting sessions | 1 | 0.4 | 7 | 3.9 |
| • Does not provide progressive assessment | 0 | 0.0 | 1 | 0.6 |
| • Does not provide enough feedback | 0 | 0.0 | 1 | 0.6 |
| **Total** | **6** | **2.9** | **48** | **27.0** |
| Lack of clarity | | | | |
| • Materials not easily understood | 17 | 7.1 | 9 | 5.1 |
| • Confusion about what is required | 4 | 1.7 | 1 | 0.6 |
| • Poor organisation | 1 | 0.4 | 0 | 0.0 |
| **Total** | **22** | **9.0** | **10** | **5.7** |
| Structural issues | | | | |
| • Involves too much theory | 0 | 0.0 | 2 | 1.1 |
| • Does not provide comprehensive training | 6 | 2.5 | 3 | 1.7 |
| • Too many subjects presented at same time | 2 | 0.8 | 0 | 0.0 |
| • Involves too much structure | 4 | 1.7 | 11 | 6.2 |
| **Total** | **12** | **5.0** | **16** | **9.0** |

**Table 24: Disadvantages of instructional method as reported by students (cont.)**

| Disadvantages | Flexible delivery students | | Traditional students | |
|---|---|---|---|---|
| | No. of cases | % of respondents (n=240) | No. of cases | % of respondents (n=178) |
| *Time pressures* | | | | |
| • Not enough time to get things done | 33 | 13.8 | 72 | 40.4 |
| • Setting up equipment takes time | 5 | 2.1 | 2 | 1.1 |
| • Takes too long to get feedback from teachers | 12 | 5.0 | 0 | 0.0 |
| • Too many subjects presented at same time | 2 | 0.8 | 0 | 0.0 |
| • Having to do assignments | 5 | 2.1 | 1 | 0.6 |
| **Total** | **57** | **23.8** | **75** | **42.1** |
| *Cost* | | | | |
| • Too costly | 2 | 0.8 | 3 | 1.7 |
| *Inadequate equipment* | | | | |
| • Lack of access to appropriate facilities or equipment | 23 | 9.6 | 11 | 6.2 |
| *Inadequate learning* | | | | |
| • Ineffective learning | 4 | 1.7 | 1 | 0.6 |
| *Not related to industry* | | | | |
| • Not related to current practice in industry | 6 | 2.5 | 5 | 2.8 |

*Rounded from 0.008

## Suggestions for improvement

The most common suggestion for improvement for both flexible delivery students and traditional delivery students related to altering the structure of the training program. This was suggested by under half of the flexible delivery students and just over half of the traditional delivery students. For flexible delivery students the second most frequent suggestion was the need to increase the level of interaction with teachers and the need to ensure clarity of materials. For traditional delivery students the second most frequently reported suggestion was for increasing the number of learning options available. This was followed by increasing or maintaining interaction with teachers. These data are reported in Table 25.

**Table 25: Students' suggestions for improvement**

| Suggestions | Flexible delivery Students | | Traditional delivery Students | |
|---|---|---|---|---|
| | No. of cases | % of respondents (n=156) | No. of cases | % of respondents (n=135) |
| **Alter structure** | | | | |
| • Add more structure to the training | 51 | 32.7 | 42 | 31.1 |
| • Allow more time | 12 | 7.7 | 26 | 19.3 |
| • Have less theory and assignments | 5 | 3.2 | 4 | 3.0 |
| • Reduce amount of time for return of assignments | 1 | 0.6 | 2 | 1.5 |
| • Keep learning ability groups together | 0 | 0.0 | 1 | 0.7 |
| **Total** | **69** | **44.3** | **74** | **54.8** |
| **Ensure clarity** | | | | |
| • Ensure clarity of materials and requirements | 32 | 20.5 | 12 | 7.7 |
| Increase or maintain interaction | | | | |
| • Increase class-based activities | 29 | 18.6 | 10 | 7.4 |
| • Remain as class-based activity | 1 | 0.6 | 3 | 2.2 |
| • Have smaller class sizes | 1 | 0.6 | 8 | 5.9 |
| • Increase interaction with tradespeople | 0 | 0.0 | 1 | 0.7 |
| **Total** | **31** | **19.8** | **22** | **16.3** |
| **Increase availability of teachers** | | | | |
| • Increase availability of teachers | 25 | 18.6 | 14 | 10.4 |
| **Provide more learning options** | | | | |
| • Provide other learning options | 4 | 2.6 | 7 | 5.2 |
| • Provide more practical examples | 17 | 10.9 | 11 | 8.1 |
| • Increase choice of study methods | 1 | 0.6 | 1 | 0.7 |
| • Introduce work experience | 3 | 1.9 | 3 | 2.2 |
| • Increase complexity | 2 | 1.3 | 3 | 2.2 |
| • Increase reviews following tests | 1 | 0.6 | 2 | 1.5 |
| **Total** | **28** | **17.9** | **27** | **20.0** |
| **Improve resources available** | | | | |
| • Provide text books | 7 | 4.5 | 1 | 0.7 |
| • Improve facilities and equipment | 8 | 5.1 | 13 | 9.6 |
| **Total** | **15** | **9.6** | **14** | **10.3** |
| **Improve quality of teachers** | | | | |
| • Improve quality of teachers | 9 | 5.8 | 13 | 9.6 |
| **Alter requirements** | | | | |
| • Change requirements for uniforms | 2 | 1.3 | 4 | 3.0 |
| • Increase exemptions | 1 | 0.6 | 1 | 0.7 |
| • Increase number of assignments | 5 | 3.2 | 1 | 0.7 |
| **Total** | **8** | **5.1** | **2** | **1.4** |

# Conclusions and recommendations

## Student outcomes

The findings of the first part of this study are based on the analysis of module outcomes taken from information provided by State training authorities to the Australian National Training Authority and collected by the National Centre for Vocational Education Research. These have provided some useful information on the relative successes of various modes of delivery in delivering pass rates and completion rates for selected discipline groupings and particular groups of students.

### No one best strategy

This analysis, based on the range of indicators examined, has been unable to provide definitive answers as to which strategy needs to be put in place best to ensure consistent successes for all clients. These findings show that module pass rates for all but one of the strategies were found to be generally high. That is to say, the overwhelming majority of modules assessed within these strategies resulted in a pass. In addition, all strategies across all disciplines were able to produce pass rates which were over 80 per cent, and all but one capable of producing pass rates over 90 per cent. This means that it is difficult to determine which strategy will always provide the best outcomes for all students.

### The performance of the external/correspondence delivery strategy

The external/correspondence mode of delivery, although able to produce pass rates over 90 per cent for one discipline grouping, consistently produced pass rates for other discipline groupings which were, in some cases, about half the rate of those produced by other strategies, and often well below the 50 per cent mark. In addition, the strategy also frequently performed poorly in relation to others when the pass rates for different groups (males, females, part-time and full-time workers, and students of different age groups) were examined.

The number of withdrew–failed outcomes was the major contributor to the low pass rates. However when a pass rate is computed only for those cases where an assessment has been taken, then the external/correspondence delivery strategy provides pass rates closer to those provided by the other strategies.

It is not clear why students decide to withdraw from a module at a time which incurs a penalty. It could be that they had no intention of completing the module and only enrolled to receive the learning materials. If this is so then it is important for institutes and training authorities to put in place a mechanism to meet these needs so that pass and completion rates are not distorted by large withdrew–failed outcomes. Another explanation may be that students are not made sufficiently aware of the deadline for withdrawals without penalty. If this is the case then more effort at the time of enrolment should be allocated to informing students of the administrative requirements.

The external/correspondence delivery strategy provided module completion rates that were generally below those of other strategies. This also means that students studying via this strategy were far more likely not to complete their studies (as measured at a certain point in time) than others. There may be many reasons for students not completing their studies.

Some of these reasons will be discussed at length when we consider students' responses to the questionnaire survey.

### The performance of local class methods of delivery

Although the most flexible of the methods—the external/correspondence strategy—has been found to be a poor performer in terms of producing module completion rates, and module pass rates which include withdrew–failed outcomes, the local class strategy which is generally considered to be the most structured of the strategies, has itself not provided the highest levels of performance. The reasons for this are not clear. There do not seem to be any relationships between student outcomes and age, gender and employment category for the different strategies. However, we do know from our survey of students, that traditional delivery students are less likely than flexible delivery students to rate themselves as being of above average ability. They are also more likely to rate themselves in the below average ranges of ability. These ratings may indicate a lower degree of self-confidence in students who choose to study in traditional formats. This lack of confidence may then affect their outcomes in terms of pass, completion and withdrawal rates. If these ratings of ability are accurate, then it could be that students who had opted to undertake traditional delivery in the discipline groupings examined may have less ability than students who chose to study via alternative strategies.

### The performance of other alternative delivery strategies

Typically, other alternative delivery methods have recorded relatively high pass rates. This means that although complete flexibility (as in the external/correspondence mode) may not improve a student's chance of completing a module, a certain degree of flexibility may assist a student's chance of passing a module.

The finding that relatively high pass rates are recorded for alternative strategies should provide encouragement to those students who need to undertake their studies via alternative methods because there are no other options offered. However it must be stressed that success in these strategies is highly dependent on a student's willingness to apply themselves to their studies in terms of allowing sufficient time to prepare for assignments and assessments.

## Conclusion

Administrative data provide information on aggregate rankings on pass and completion rates of alternative delivery strategies. However qualitative data is required to probe the reasons. Therefore it is important to gather information on their experiences and evaluations of the method of training from students and teachers.

# Student perspectives

Part two of the study describes responses to a questionnaire survey by students who had undertaken training delivered via flexible or traditional delivery strategies. The survey provided valuable insights into the profile and the experiences of students studying via these methods of delivery.

## About the students

Students in flexible delivery strategies tended to be older than those involved in traditional delivery strategies. However flexible delivery students were more likely to be in full-time work. Almost three-quarters of them lived between one and 15km from the campus. This was the case for just under half of the traditional delivery students. There were no major differences between the number of hours spent on their studies for the two groups. There were also no major differences between their educational backgrounds.

## Students' reasons for choosing method of delivery

Flexible delivery students were more likely than traditional delivery students to indicate that their choice of method was based on its ability to fit in with their lifestyles. Traditional delivery students were more likely to indicate that they had chosen the method because it was the only method offered. Although the second most common reason for both groups was that the method chosen was the most convenient, this was the case for a substantially greater percentage of flexible delivery students than for traditional delivery students. Where almost a third of flexible delivery students chose the method because they felt it helped them to understand the material better, just under a fifth of the flexible delivery students gave this as a reason. There were no other major differences between the two groups. Very few students in both groups chose the method because it was less work, and about the same percentage chose it because it was an easier form of learning.

The reasons why students choose to study using a particular mode may hold the key to their relative success in that mode. For example, if students are choosing to study via the external/correspondence delivery method because it fits in with their lifestyle and because it is the most convenient method, then we can say that they are prioritising other commitments in their lives. This means that studying is not their first priority. By prioritising other commitments they may not choose to or be able to put in the effort to do the work required to understand concepts, complete necessary assignments to a high standard, or to prepare themselves sufficiently or adequately for assessments. In addition, they may under-estimate the time required for the completion or passing of the module. Their ability to pass or complete the module then suffers as a result.

The findings given in the example above are based on the results of students in six discipline groupings. If this is also generally the case for all external/correspondence delivery students, then we may have one explanation for why they tend to do badly in terms of passing or completing modules.

## How students prefer to learn

The findings of this part of the study also provide an insight into the learning preferences of both groups of students. Flexible delivery students were far more likely than traditional delivery students to say that they learnt best when studying individually with texts and study guides to help them, doing their own research and interacting on-line with a computer. Flexible delivery students were more likely than traditional delivery students to say that they learnt best from a lecturer in a traditional classroom, practising skills in practical workshops, working on a problem with other members in a group, and looking at pictures or diagrams which help explain concepts and processes. Students in both groups tended not to like learning by watching videos or listening to audiotapes.

These findings indicate that students have generally chosen a delivery strategy that accords with the way they prefer to learn. However, when these findings are taken in conjunction with those from the first part of the study, it seems that learning preferences may not have a strong bearing on the pass and completion rates of those students who choose to study by the external/correspondence delivery strategy. They have the highest non-completion rates and the lowest pass rates in the great majority of cases examined in the study.

If students are following their learning preferences but not gaining the results they require to pass or complete the modules, it could be that they are not fully aware of how to realise the best from their preferred method of learning. This may require training providers to spend more time in preparing students to undertake studies in the various modes by helping them to understand the problems which may be encountered along the way. This is especially the case for those choosing to study via the external/correspondence method of delivery. However, given that flexible delivery students were more likely than others to say that they

had been provided with substantial induction activities, an alternative strategy may need to initiated, including a possible re-orientation of the induction process already in place.

It may also mean that teachers and lecturers need to look at the amount of time they spend in face-to-face contact with students and work out ways for increasing their interaction with students so that students have ready access to assistance when required. Alternatively, it could be that more attention needs to be paid to the actual interaction with students.

## Self-ratings of ability

When both sets of students rated their literacy, language, and problem-solving and mechanical skills there were no statistically significant differences between the two groups on any of the skill areas. There were few students in both groups who rated themselves in the below average ranges of ability on any dimension. However, when only the well above average ratings are examined we find that flexible delivery students were far more likely to rate themselves as well above average in all cases apart from mechanical skills. When only below average ratings were examined, traditional delivery students were more likely to consistently rate themselves at this level at a slightly higher rate than were flexible delivery students. This means that flexible delivery students appear to have a greater degree of self-confidence. These student self-ratings indicate that TAFE students themselves do not conform to the image, sometimes held by others, of TAFE students being of lower calibre than students from other tertiary institutions.

## Preparation and support for learning

This study has shown that students, whatever the delivery strategy they had utilised, generally valued the training they had undergone and believed that they had been provided with the necessary assistance prior to commencing their studies as well as that which was required during their studies. This included the provision of study skills training, appropriate resources and equipment, teacher support, well-planned and structured learning activities, and meaningful and appropriate assessment tasks. They had also generally been able to locate reference materials required for the preparation of assignments, and equipment required for the development of skills. In addition, the great majority claimed they had found it easy to follow study guides and texts, and access equipment and materials required for learning and developing skills.

This must be encouraging for teachers in the TAFE sector, and especially for those providing studies in the specific modules undertaken by students in this study. It suggests that providers are taking the time to ensure that students are well prepared before commencing their studies and have available to them the facilities and resources and support required to complete them.

It does not appear that students attribute to their pre-training, any of the problems encountered in completing modules or as disadvantages of studying via their chosen method.

## Problems and concerns

A measure of the relative effectiveness of different forms of delivery may be obtained from student reports of the problems and concerns encountered in their courses. For flexible delivery students, the most common problems included making enough time to study and fitting in family obligations with study. For traditional delivery students, the most common problems were completing assignments to meet deadlines, finding enough time to study, and following instructions for practical sessions. As already noted, most students in both groups had found it relatively easy to access material or equipment required for their learning. Few students in both groups had found it difficult to follow texts and study guides.

These findings show that students themselves are recognising the role they have in producing successful outcomes. They are generally not choosing to identify as problems those factors

which are directly related to the delivery strategy itself; rather, they are looking at their own shortcomings in meeting the requirements of the course. They are citing difficulties in organising their time sufficiently to be able to manage their private commitments with their study commitments. However we cannot always be sure that they are taking responsibility for not being able to follow instructions for practical sessions. Nevertheless, recognising that the majority of students in both groups had found it easy to follow study texts and study guides, we are safe in assuming that this is the case.

Students by their responses have supported the idea that delivery strategies on their own do not produce successful outcomes. There are many other variables that need to be taken into account when evaluating the value of different modes of delivery.

Although it may be difficult to determine which strategies are the most effective in producing student outcomes, students themselves may provide some extra insight into the ways strategies can be improved. They can identify the advantages and disadvantages they experienced, and provide some suggestions for the improvement of the way training is delivered.

## Perceived advantages

Flexible delivery students reported advantages that were related to the flexibility provided by the method, the flexibility it allowed them to self-pace their study program, and the opportunity it gave them to fit in study times with work and family obligations. Frequently reported was the support that they had received from teachers and tutors. For traditional delivery students, the most frequently cited advantages related to personal contact with others. This included face-to-face contact with teachers and students and the support received from teachers.

Where almost half of the traditional delivery students cited improvements in knowledge and skill as a consequence of the delivery method, just over a tenth of flexible delivery students reported these as advantages. However flexible delivery students were more likely than traditional delivery students to cite advantages in terms of cost and time efficiencies.

These findings provide further insight into the reasons for students choosing to study via a particular method. They show that the priority for flexible delivery students is being able to juggle studies with other activities. The priority for traditional delivery students on the other hand, is to be able to study via a method that allows them to have more face-to-face contact. This could mean that the task of completing or passing courses may not be the first priority of flexible delivery students but may be the first priority for those students who have decided to incorporate time for class activities into their lives.

It is for these reasons that it is difficult to provide a definite evaluation of the effects of different modes of delivery. What must be taken into account is the motivation of the student undertaking the mode.

## Perceived disadvantages

When students were asked to report any disadvantages with the form of learning they had followed, the most common disadvantage, identified by just under half of the flexible delivery students providing responses, related to interaction with others. They cited the lack of instant access to teachers when experiencing difficulties, and the lack of general interaction with other students and teachers. The second most frequently cited disadvantage related to personal issues such as the self-discipline required to get things done, and the self-consciousness experienced by students in video-conferencing situations. For traditional delivery students, the most common disadvantage, identified by well over a third of students, related to time pressures. Of these the most frequent was the lack of adequate time to accomplish tasks. Where flexible delivery students focussed on self-discipline, traditional delivery students tended to emphasise the lack of time provided to complete their studies.

Traditional delivery students were also slightly more likely to identify ineffective teaching processes as a disadvantage than were flexible delivery students. Flexible delivery students were more likely to identify difficulties in understanding materials than were traditional delivery students. They were also more likely to talk about problems in accessing equipment after hours and having access to up-to-date materials and equipment. This was particularly the case for those students dependent on the availability of computers and the smooth operation of internet facilities.

The disadvantages cited by students provide further insights into the effectiveness of various methods of delivery. Both groups emphasise the importance of interacting with others during the learning process. Where flexible delivery students were concerned that they had no such interaction, traditional delivery students complained about the nature of their interaction with teachers. For both groups, interacting with teachers and other students is perceived to provide the social and educational support required during learning.

If flexible delivery students seek interaction with other students and are frustrated because they lack easy access to teachers when experiencing problems, then to some extent, these frustrations may explain why the most flexible of the strategies, the external/correspondence delivery strategy, performs so poorly in terms of pass and completion rates. If instant access to teachers when students are experiencing problems, is the prime disadvantage experienced by flexible delivery students, then it is important to ensure that students are able to access assistance at regular intervals. This may mean that workshops, which bring students and teachers together, are included within the course. This will have two advantages. It will allow students to meet with other students to discuss similar problems and provide social interaction, and it will enable students to get to know teachers so that they feel comfortable in contacting them when they are experiencing problems.

## Perceived effectiveness—student evaluations

Students were positive in their evaluations of the extent to which the method they had utilised had suited the content of the module and had been able to assist them to understand subject material, practise skills and complete course requirements. This provides us with a measure of students' perceptions of the effectiveness of the delivery strategy. Because there were no major differences between the two groups in how they evaluated the effectiveness of the strategy on these items, we are not able to say that the traditional method helps students to do better than the flexible delivery method or vice versa.

However flexible delivery students were far less likely to claim that the method allowed them to have ready access to instructors than were traditional delivery students. Although not unusual, this finding provides us with some information for comparing the two groups. Ready access to instructors at the time of learning is one of the central differentiating factors between flexible and traditional delivery methods. It is what flexible delivery students have to trade off for the flexibility which comes with the freedom to choose when to study, where to study, and what to study.

Although providing ready access to instructors at the time of learning would be an impossible task for students in external/correspondence courses, there are strategies which can be implemented to increase the interaction students have with instructors throughout the course of their studies. These may include ensuring that instructors are able to travel to different regional or rural centres so that students are able to discuss problems with instructors in a face-to-face manner, or the provision of regular face-to-face on-campus workshops for those students who live locally and choose to use flexible delivery methods.

## Student satisfaction

Student satisfaction with the delivery method can be another indicator of its perceived effectiveness. Flexible delivery students were more likely than traditional delivery students to

say that they looked forward to their study sessions, preparing for assignments and doing assessments. In addition, they were also more likely to say that they would recommend this method of learning to other students. However older students in both groups appeared to look forward to study sessions to a greater extent than did younger students.

One reason why flexible delivery students feel more satisfied with their method of delivery than traditional delivery students lies in part in the increased role they had in selecting the delivery method in the first place. Another explanation for their increased satisfaction is that, regardless of the difficulties encountered by not having ready access to teachers and other students, the increased responsibility for their own learning allows them to interact in a much more active way with subject material. This may make the learning experience a far more enjoyable one. Moreover, the ability to progress at their own pace may provide added incentives for students and so contribute to their positive evaluation of the methods and their own satisfaction with them.

If students are satisfied with these flexible delivery methods the question needs to be asked why it is that the most flexible of the methods, the external/correspondence method, generally produces such low outcomes in terms of module pass rates and module completion rates. One answer may be that the very thing that attracts them to this method, namely its flexibility, may in fact hinder the attainment of student goals.

It may be that this is not the best option for busy people who have many competing commitments in their lives. Busy people who want to pass and complete their studies may need to structure the time for studies into their daily programs to ensure that deadlines are met. Furthermore, such people may need to limit the amount of flexibility they have in order to complete and pass courses. Flexibility may help those who manage their time effectively and ensure that time is set aside for studies. Having flexibility may be a disadvantage to those who are less able to manage their time.

## Conclusions

There is little in these findings to suggest that one method is substantially better than another, although it is quite clear that completion rates are poorest for the external/correspondence method.

The information on module outcomes that we have examined in part 1 of this study is based on information provided by training providers to national authorities. Another consideration that must be taken into account when evaluating the effects of different modes of delivery is the reliability of this information. If providers do not have sufficient staff and other resources to implement systems that will enable them to provide accurate information according to the AVETMIS Standard, it is difficult to determine the extent to which module outcomes are affected by different delivery strategies. Furthermore, training providers may have other reasons for reporting outcomes in certain ways.

Information from students has provided us with a number of possible explanations for why students may find difficulty with completing work or passing assessments. The information gained from student responses indicates that certain learning principles should guide the structure of the learning activity whatever the delivery method. These include the provision of clear instructions, opportunity to discuss problems or issues with teachers and peers, timely feedback and enough time to practise skills and meet requirements. The findings also show that students generally accept the responsibility for their own shortcomings. Being unable to keep to a strict timetable to ensure deadlines are met may be a significant shortcoming of some students. The findings also highlight the advantages of each method and the problems that can occur.

## Recommendations for action

The recommendations resulting from this study are mainly concerned with improving the performance of the external/correspondence forms of delivery, and promoting the benefits of integrating flexibility with structured training. Because delivery strategies on their own do not produce module outcomes, the focus of the initiatives needs to be directed to students and their teachers. They need to address the establishment of requirements for regular interaction between students and their teachers and students and their peers.

### 1. Workshops for students

Funding should be made available for colleges to conduct regular workshops for external/correspondence students to enable them to meet with teachers and other students on at least three occasions during the term. These workshops could occur at the beginning of the course, midway through the course, and prior to examinations. Alternatively, they could occur at the beginning of each major section of the course. For those students unable to get to a campus, these information sessions could be delivered via the internet using a chat room facility, or via telephone for those who lack internet access.

The first workshop should be divided into two parts. The first part would introduce students to their teachers and to other students in the course. In this way students could exchange contact details to enable discussion of problems or other issues arising during the term. Special issues such as the importance of a regular routine for study, the need to manage time efficiently and the need to contact teachers on a regular basis either through electronic mail or telephone, would be covered.

The second section of the workshop would provide students with information on the study skills required for success and how to follow the study guides provided. Time would also be set aside to enable teachers to provide an overview of the course and introduce students to course exercises which have provided difficulty for students in the past. Effective strategies for approaching these exercises could be discussed.

These sessions can alert students to the particular problems associated with some methods of delivery. In particular, students wishing to incorporate flexibility into their programs should be made aware that the external/correspondence method may not be the only way to achieve flexibility in how, when, and where to study. Because this method has high association with low completion rates, students should also consider other flexible forms of delivery.

### 2. Workshops for teachers

Funding should also be made available to enable teachers to attend special workshops designed to provide them with the information and skills required for assisting students in external/correspondence delivery modes to remain focussed on their study so that they are able to meet course deadlines. The importance of monitoring electronic or voice-mail messages regularly and getting back to students as soon as possible should also be discussed.

Time could also be given to allow teachers to share their approaches to the procedures involved in setting up courses, helping students to understand materials and to providing students with timely feedback.

### 3. Facilities and equipment

Arrangements should be made to ensure that electronic equipment is fully maintained or kept up to date to enable students and teachers to maintain regular contact. Where students are dependent on this equipment for completing assignments, arrangements should be made to ensure their easy access to this equipment during or after hours.

## Recommendations for further research

In this study there has been no attempt to control for variations in level or ability of students, and ability and experience of teachers. There has also been no attempt to control for level of course, or subject content. An experimental study in which students taking the same level of course are randomly assigned to delivery strategies which are provided by teachers of similar ability and experience, would further increase our knowledge of the effects of different modes of delivery on module outcomes.

Another area worthy of further research is the actual status of those outcomes which are reported as unknown.

# Appendices

# Appendix A

**Table A1: Percentage of module enrolments for each delivery strategy and discipline grouping by gender**

| | Accounting | | Commercial cookery | | Computing | | Hospitality | | Civil engineering | | Electronic engineering | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | F | M | F | M | F | M | F | M | F | M | F | M |
| Local class | 66.4 | 31.6 | 45.0 | 52.2 | 47.9 | 43.1 | 55.5 | 40.6 | 5.8 | 92.6 | 4.5 | 94.8 |
| Remote class | 72.9 | 23.4 | 48.6 | 50.8 | 42.3 | 54.0 | 58.2 | 40.9 | 2.0 | 97.4 | 9.1 | 81.2 |
| Self-paced scheduled | 73.9 | 24.0 | 49.5 | 50.2 | 52.0 | 44.2 | 63.4 | 33.0 | 3.0 | 97.0 | 4.6 | 93.7 |
| Self-paced unscheduled | 67.2 | 31.1 | 31.9 | 68.1 | 47.1 | 47.7 | 73.4 | 26.0 | 1.3 | 98.7 | 0.0 | 100.0 |
| External/correspondence | 67.4 | 32.2 | 36.9 | 61.3 | 57.0 | 42.5 | 64.2 | 35.7 | 9.4 | 90.2 | 3.6 | 96.4 |
| Workplace/experiential | 64.1 | 34.9 | 50.3 | 49.7 | 47.4 | 51.9 | 67.0 | 32.5 | 1.9 | 90.4 | 23.6 | 75.0 |
| Mixed | 71.6 | 28.6 | 45.1 | 54.1 | 66.2 | 32.0 | 60.9 | 37.9 | 3.7 | 96.0 | 7.2 | 92.4 |
| Other | 61.3 | 37.7 | 52.6 | 47.0 | 50.1 | 48.8 | 60.7 | 38.6 | 14.4 | 84.2 | 0.5 | 95.0 |
| **Total number of enrolments** | **165 763** | **77 966** | **43 276** | **50 260** | **498 013** | **442 619** | **224 246** | **158 558** | **1 443** | **22 962** | **4 229** | **87 747** |

**Table A2: Percentage of female and male module enrolments for each delivery strategy according to discipline grouping**

| | Accounting | | Commercial cookery | | Computing | | Hospitality | | Civil engineering | | Electronic engineering | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | F | M | F | M | F | M | F | M | F | M | F | M |
| Local class | 80.9 | 81.8 | 91.3 | 91.3 | 84.4 | 85.5 | 85.1 | 87.9 | 87.7 | 87.9 | 90.9 | 91.7 |
| Remote class | 0.1 | 0.1 | 0.4 | 0.3 | 0.4 | 0.6 | 0.8 | 0.8 | 0.4 | 1.3 | 0.4 | 0.2 |
| Self-paced scheduled | 4.8 | 3.3 | 0.6 | 0.6 | 5.6 | 5.4 | 0.7 | 0.5 | 1.4 | 2.8 | 3.4 | 3.3 |
| Self-paced unscheduled | 0.9 | 0.8 | 0.5 | 0.9 | 1.4 | 1.5 | 1.2 | 0.6 | 0.1 | 0.3 | 0.0 | 0.2 |
| External/correspondence | 7.4 | 7.5 | 0.4 | 0.5 | 3.3 | 2.8 | 0.7 | 0.6 | 6.1 | 3.7 | 0.7 | 0.9 |
| Workplace/experiential | 0.4 | 0.4 | 1.9 | 1.6 | 0.2 | 0.3 | 3.2 | 2.2 | 0.3 | 1.0 | 0.8 | 0.1 |
| Mixed | 2.6 | 2.2 | 3.7 | 3.9 | 2.2 | 1.2 | 4.0 | 3.6 | 1.2 | 1.9 | 0.4 | 0.3 |
| Other | 2.9 | 3.8 | 1.3 | 1.0 | 2.5 | 2.7 | 4.2 | 3.8 | 2.8 | 1.0 | 3.3 | 3.3 |
| **Total number of enrolments** | **165 763** | **77 966** | **43 276** | **50 260** | **498 013** | **442 619** | **224 246** | **158 558** | **1 443** | **22 962** | **4 229** | **87 747** |

## Appendix B

**Table B1: Percentage of module enrolments by students in part-time or full time work for each delivery strategy within discipline groupings**

| | Accounting | | Commercial cookery | | Computing | | Hospitality | | Civil engineering | | Electronic engineering | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Part-time | Full-time | Part-time | Full-time | Part-time | Full-time | Part-time | Full-time | Part-time | Full-time | Part-time | Full-time |
| Local class | 54.2 | 45.8 | 66.7 | 33.3 | 56.0 | 44.0 | 42.6 | 57.4 | 78.2 | 21.8 | 78.4 | 21.6 |
| Remote class | 52.5 | 47.5 | 38.5 | 61.5 | 82.5 | 17.5 | 32.4 | 67.6 | 86.7 | 13.3 | 73.4 | 26.6 |
| Self-paced scheduled | 55.6 | 44.4 | 74.5 | 25.5 | 60.7 | 39.3 | 35.2 | 64.8 | 86.0 | 14.0 | 77.7 | 22.3 |
| Self-paced unscheduled | 60.3 | 39.7 | 24.5 | 75.5 | 53.6 | 46.4 | 31.4 | 68.6 | 84.4 | 15.6 | 97.0 | 3.0 |
| External/correspondence | 77.4 | 22.6 | 83.2 | 16.8 | 74.3 | 25.7 | 64.1 | 35.9 | 94.5 | 5.5 | 87.5 | 12.5 |
| Workplace/experiential | 40.5 | 59.5 | 33.1 | 66.9 | 92.7 | 7.3 | 3.8 | 96.2 | 99.5 | 0.5 | 85.5 | 14.5 |
| Mixed | 64.1 | 35.9 | 52.5 | 47.5 | 57.8 | 42.2 | 42.4 | 57.6 | 97.7 | 2.3 | 69.0 | 31.0 |
| Other | 55.6 | 44.4 | 55.1 | 44.9 | 54.7 | 45.3 | 52.5 | 47.5 | 64.8 | 35.2 | 95.9 | 4.1 |
| **Total number of enrolments** | **41 717** | **54 536** | **15 191** | **28 520** | **148 592** | **198 704** | **97 219** | **66 073** | **2 594** | **10 423** | **9 571** | **36 459** |

**Table B2: Full-time and part-time worker enrolments grouped according to delivery strategy for each discipline grouping (%)**

| | Accounting | | Commercial cookery | | Computing | | Hospitality | | Civil engineering | | Electronic engineering | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Part-time | Full-time | Part-time | Full-time | Part-time | Full-time | Part-time | Full-time | Part-time | Full-time | Part-time | Full-time |
| Local class | 84.5 | 76.6 | 88.3 | 94.1 | 86.1 | 82.0 | 81.0 | 88.4 | 93.1 | 82.9 | 94.1 | 89.7 |
| Remote class | 0.1 | 0.1 | 0.3 | 0.1 | 0.3 | 0.9 | 0.5 | 0.3 | 1.7 | 2.8 | 0.2 | 0.1 |
| Self-paced scheduled | 3.6 | 3.5 | 0.4 | 0.7 | 4.6 | 5.3 | 0.8 | 0.6 | 1.7 | 2.6 | 4.1 | 3.8 |
| Self-paced unscheduled | 0.7 | 0.8 | 3.2 | 0.6 | 1.4 | 1.2 | 2.3 | 1.5 | 0.2 | 0.3 | 0.0 | 0.4 |
| External/correspondence | 4.8 | 12.6 | 0.2 | 0.5 | 2.3 | 5.0 | 0.4 | 1.0 | 1.3 | 5.4 | 0.5 | 0.9 |
| Workplace/experiential | 1.0 | 0.5 | 1.8 | 0.5 | 0.1 | 0.6 | 9.7 | 0.6 | 0.0 | 2.0 | 0.1 | 0.2 |
| Mixed | 2.2 | 2.9 | 4.4 | 2.6 | 2.4 | 2.5 | 2.4 | 2.6 | 0.3 | 3.2 | 0.2 | 0.1 |
| Other | 3.2 | 3.0 | 1.4 | 0.9 | 2.9 | 2.6 | 3.0 | 4.9 | 1.7 | 0.8 | 0.8 | 4.9 |
| **Total number of enrolments** | **41 717** | **54 536** | **15 191** | **28 520** | **148 592** | **198 704** | **97 219** | **66 073** | **2 594** | **10 423** | **9 571** | **36 459** |

# Appendix C

**Table C1: The number of reported enrolments for all age groups by delivery strategy**

| Discipline grouping | Age group | Local class | Remote class | Self-paced scheduled | Self-paced unscheduled | External/ correspondence | Workplace/ experiential | Mixed | Other | All |
|---|---|---|---|---|---|---|---|---|---|---|
| Accounting | 15–17 | 13 046 | 50 | 812 | 228 | 397 | *36 | 410 | 357 | 15 336 |
| | 18–19 | 43 582 | *21 | 1 963 | 484 | 1 333 | 87 | 1 076 | 554 | 49 100 |
| | 20–24 | 48 932 | *15 | 2 413 | 469 | 3 947 | 263 | 1 218 | 1 276 | 58 533 |
| | 25–54 | 86 514 | 74 | 5 094 | 773 | 11 845 | 494 | 3 173 | 2 535 | 110 502 |
| Commercial cookery | 15–17 | 16 270 | 94 | 101 | 327 | *22 | 120 | 592 | 284 | 17 810 |
| | 18–19 | 23 859 | *20 | 135 | 182 | *42 | 267 | 779 | 108 | 25 167 |
| | 20–24 | 20 477 | 59 | 145 | *47 | 89 | 453 | 895 | 245 | 22 410 |
| | 25–54 | 22 296 | 58 | 116 | 78 | 228 | 731 | 1 073 | 164 | 24 744 |
| Computing | 15–17 | 55 395 | 895 | 3 029 | 967 | 1 637 | *43 | 1 010 | 984 | 63 960 |
| | 18–19 | 138 080 | 200 | 8 554 | 1 991 | 1 419 | 163 | 2 235 | 1 888 | 154 530 |
| | 20–24 | 146 229 | 592 | 9 781 | 1 944 | 3 869 | 316 | 2 435 | 3 774 | 168 940 |
| | 25–54 | 399 960 | 2 764 | 27 702 | 6 180 | 20 296 | 1 207 | 9 456 | 9 092 | 476 657 |
| Hospitality | 15–17 | 46 192 | 1 141 | 433 | 843 | 427 | 416 | 1 344 | 4 340 | 55 136 |
| | 18–19 | 121 520 | 458 | 870 | 1 234 | 351 | 1 461 | 3 838 | 2 164 | 131 896 |
| | 20–24 | 78 026 | 534 | 499 | 682 | 563 | 3 249 | 3 949 | 2 539 | 90 041 |
| | 25–54 | 75 585 | 769 | 396 | 820 | 1 062 | 5 408 | 4 779 | 1 464 | 90 283 |
| Civil engineering | 15–17 | 1 176 | *3 | *18 | *16 | *3 | *33 | *2 | *22 | 1 273 |
| | 18–19 | 4 660 | *10 | 71 | *3 | *12 | *16 | *18 | *8 | 4 798 |
| | 20–24 | 6 426 | *34 | 301 | *5 | 186 | 58 | 101 | 87 | 7 198 |
| | 25–54 | 8 231 | 200 | 261 | *30 | 689 | 128 | 326 | 161 | 10 026 |
| Electronic engineering | 15–17 | 6 498 | *2 | 335 | *3 | *41 | *4 | 84 | *31 | 6 998 |
| | 18–19 | 19 355 | *22 | 795 | *4 | *27 | *4 | 53 | 55 | 20 315 |
| | 20–24 | 25 415 | *46 | 978 | *13 | 148 | *11 | *34 | 405 | 27 050 |
| | 25–54 | 29 897 | 52 | 931 | 131 | 587 | 114 | 70 | 1 096 | 32 878 |

* Denotes module enrolments of less than 50.

**Table C2: Percentage of module enrolments for 15–17, 18–19, 21–24, 25–54-year-olds for delivery strategy by discipline grouping**

| Discipline grouping | Age group | Local class | Remote class | Self-paced scheduled | Self-paced unscheduled | External correspondence | Workplace experiential | Mixed | Other | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Accounting | 15–17 | | | | | | | | | |
| | 18–19 | | | | | | | | | |
| | 21–24 | | | | | | | | | |
| | 25–54 | | | | | | | | | |
| Commercial cookery | 15–17 | | | | | | | | | |
| | 18–19 | | | | | | | | | |
| | 21–24 | | | | | | | | | |
| | 25–54 | | | | | | | | | |
| Computing | 15–17 | | | | | | | | | |
| | 18–19 | | | | | | | | | |
| | 21–24 | | | | | | | | | |
| | 25–54 | | | | | | | | | |
| Hospitality | 15–17 | | | | | | | | | |
| | 18–19 | | | | | | | | | |
| | 21–24 | | | | | | | | | |
| | 25–54 | | | | | | | | | |
| Civil engineering | 15–17 | | | | | | | | | |
| | 18–19 | | | | | | | | | |
| | 21–24 | | | | | | | | | |
| | 25–54 | | | | | | | | | |
| Electrical engineering | 15–17 | | | | | | | | | |
| | 18–19 | | | | | | | | | |
| | 21–24 | | | | | | | | | |
| | 25–54 | | | | | | | | | |



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## Appendix D

**Table D1: Module pass rates for full-time and part-time students***

| | Accounting | | Commercial cookery | | Computing | | Hospitality | | Civil engineering | | Electronic engineering | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Full-time | Part-time | Full-time | Part-time | Full-time | Part-time | Full-time | Part-time | Full-time | Part-time | Full-time | Part-time |
| Local class | 81.9 | 80.4 | 86.9 | 89.3 | 87.0 | 85.2 | 75.8 | 89.5 | 85.3 | 77.4 | 87.0 | 71.8 |
| Remote class | - | - | - | - | 90.1 | 81.1 | 90.2 | 98.9 | 100.0 | - | - | - |
| Self-paced scheduled | 93.6 | 89.4 | 97.0 | 90.9 | 89.6 | 83.9 | 83.5 | 93.2 | 95.5 | - | 83.9 | 56.4 |
| Self-paced unscheduled | - | - | - | - | - | - | 100.0 | 100.0 | - | - | 95.2 | - |
| External/correspondence | 45.5 | 43.6 | - | - | - | 46.7 | 54.5 | 62.1 | 46.2 | - | 47.6 | - |
| Workplace/experiential | - | - | 76.6 | - | 97.9 | - | - | - | - | - | - | - |
| Mixed | - | - | 94.5 | - | - | - | - | - | 99.1 | - | - | - |
| Other | 87.3 | 89.8 | - | 94.4 | 95.7 | 94.1 | 87.6 | 93.6 | - | - | 97.9 | - |

*The MPR rates were omitted from the analysis for strategies recording less than 50 enrolments, strategies where 25% or more of the outcomes were unknown and strategies where the number of assessments taken were minimal (less than 20).

## Appendix E

**Table E1: Module pass rates scores for males and females***

| | Accounting | | Commercial cookery | | Computing | | Hospitality | | Civil engineering | | Electronic engineering | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | F | M | F | M | F | M | F | M | F | M | F | M |
| Local class | 82.4 | 75.0 | 88.3 | 86.1 | 86.2 | 81.8 | 87.6 | 82.6 | 80.8 | 82.1 | 80.9 | 79.0 |
| Remote class | 98.6 | - | 100.0 | 79.3 | - | 92.8 | - | - | - | 100.0 | - | 84.4 |
| Self-paced scheduled | 89.6 | 83.4 | 96.7 | 94.1 | 88.4 | 78.5 | 93.6 | 87.9 | - | 87.8 | 65.3 | 75.0 |
| Self-paced unscheduled | - | - | - | - | 89.9 | - | 100.0 | 100.0 | - | 96.6 | - | 93.3 |
| External/correspondence | 44.8 | 41.2 | - | - | 46.0 | 41.7 | 52.8 | 56.5 | 30.8 | 41.3 | - | 47.4 |
| Workplace/experiential | - | - | 92.0 | 86.1 | - | 96.9 | - | - | - | - | - | - |
| Mixed | - | 84.4 | - | - | - | 91.6 | - | - | - | 99.0 | - | 93.6 |
| Other | 89.7 | 88.3 | 96.1 | 86.1 | 90.4 | 93.1 | 92.0 | 89.3 | - | 85.7 | 95.7 | 97.3 |

*The MPR rates were omitted from the analysis for strategies recording less than 50 enrolments, strategies where 25% or more of the outcomes were unknown and strategies where the number of assessments taken were minimal (less than 20).

## Appendix F

**Table F1: Module pass rates for 15–17, 18–19, 20–24, and 25–54-year-olds by band and delivery strategy (%)***

| Discipline grouping | Age group | Local class | Remote class | Self-paced scheduled | Self-paced unscheduled | External/ correspondence | Workplace/ experiential | Mixed | Other |
|---|---|---|---|---|---|---|---|---|---|
| Accounting | 15–17 | 78.5 | 100.0 | 86.1 | 84.0 | 70.4 | - | 93.9 | 90.9 |
| | 18–19 | 75.5 | - | 82.8 | - | 50.3 | - | 96.2 | 89.0 |
| | 20–24 | 74.6 | - | 84.5 | - | 35.7 | - | 90.5 | 80.0 |
| | 25–54 | 85.2 | - | 91.6 | - | 44.4 | - | - | 82.1 |
| Commercial cookery | 15–17 | 86.4 | 100.0 | 92.9 | - | - | 78.5 | - | 92.2 |
| | 18–19 | 87.4 | - | 95.2 | - | - | 91.8 | - | - |
| | 20–24 | 86.2 | - | 97.3 | - | - | 90.9 | - | - |
| | 25–54 | 87.2 | - | 94.7 | - | - | 94.4 | - | - |
| Computing | 15–17 | 87.5 | 99.4 | 83.3 | - | 59.9 | - | 92.7 | 93.6 |
| | 18–19 | 82.2 | 94.8 | 80.4 | - | 43.8 | - | 96.9 | 84.0 |
| | 20–24 | 80.5 | 92.1 | 80.2 | 84.0 | 37.3 | - | 91.5 | 97.3 |
| | 25–54 | 85.9 | 87.8 | 86.1 | - | 43.4 | - | - | 96.2 |
| Hospitality | 15–17 | 87.2 | 97.9 | 83.8 | 100.0 | 72.1 | - | - | 93.2 |
| | 18–19 | 86.5 | 85.4 | 93.1 | 100.0 | 40.4 | - | - | 91.7 |
| | 20–24 | 82.6 | 82.0 | 93.9 | 100.0 | 44.8 | - | - | 91.1 |
| | 25–54 | 84.0 | 99.1 | 93.9 | - | 55.8 | - | - | - |
| Civil engineering | 15–17 | 76.4 | - | - | - | - | - | - | - |
| | 18–19 | 77.4 | - | - | - | - | - | - | - |
| | 20–24 | 78.0 | - | - | - | 35.9 | - | 97.8 | - |
| | 25–54 | 88.2 | 100.0 | 88.9 | - | 41.3 | - | 99.4 | - |
| Electronic engineering | 15–17 | 77.2 | - | 64.8 | - | - | - | 95.5 | - |
| | 18–19 | 74.8 | - | 74.9 | - | - | - | 100.0 | - |
| | 20–24 | 79.3 | - | 74.3 | - | 58.5 | - | - | 100.0 |
| | 25–54 | 81.1 | 88.5 | 77.5 | 90.2 | 41.0 | 90.9 | 82.1 | 100.0 |

*The MPR rates were omitted from the analysis for strategies recording less than 50 enrolments, strategies where 25% or more of the outcomes were unknown and strategies where the number of assessments taken were minimal (less than 20).

## Appendix G

**Table G1: Module completion rates for part-time and full-time workers***

| | Accounting | | Cookery | | Computing | | Hospitality | | Civil engineering | | Electronic engineering | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Full-time | Part-time | Full-time | Part-time | Full-time | Part-time | Full-time | Part-time | Full-time | Part-time | Full-time | Part-time |
| Local class | 76.9 | 74.1 | 83.6 | 84.4 | 82.7 | 79.5 | 72.5 | 84.1 | 83.5 | 71.7 | 84.6 | 65.3 |
| Remote class | - | - | - | - | 91.2 | 74.8 | 84.2 | 87.4 | 100.0 | - | - | - |
| Self-paced scheduled | 84.5 | 78.0 | 95.8 | 90.9 | 85.5 | 78.8 | 72.7 | 86.8 | 95.6 | - | 81.9 | 55.8 |
| Self-paced unscheduled | - | - | - | - | - | - | 78.5 | 75.9 | - | - | 95.2 | - |
| External correspondence | 43.0 | 40.8 | - | - | - | 45.7 | 54.2 | 58.3 | 46.2 | - | 46.2 | - |
| Workplace/experiential | - | - | 63.4 | - | 94.0 | - | - | - | - | - | 82.8 | - |
| Mixed | - | - | 83.3 | - | - | - | - | - | 97.3 | - | - | - |
| Other | 76.8 | 75.5 | - | 88.7 | 85.7 | 83.5 | 83.3 | 83.8 | - | - | 96.3 | - |

*The MPR rates were omitted from the analysis for strategies recording less than 50 enrolments, strategies where 25% or more of the outcomes were unknown.

## Appendix H

**Table H1: Module completion rates for enrolments by males and females***

| | Accounting | | Commercial cookery | | Computing | | Hospitality | | Civil engineering | | Electronic engineering | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | F | M | F | M | F | M | F | M | F | M | F | M |
| Local class | 76.8 | 69.0 | 83.7 | 80.8 | 81.3 | 76.1 | 82.0 | 77.0 | 75.9 | 78.7 | 75.3 | 74.3 |
| Remote class | 91.4 | - | 90.2 | 71.9 | - | 77.0 | - | - | - | 100.0 | - | 82.3 |
| Self-paced scheduled | 79.0 | 74.2 | - | 85.9 | 83.0 | 75.3 | 83.2 | 80.6 | - | 86.3 | 63.5 | 71.5 |
| Self-paced unscheduled | - | - | 100.0 | - | 68.0 | - | 79.8 | 77.6 | - | 88.9 | - | 93.3 |
| External/correspondence | 42.4 | 39.0 | - | - | 45.1 | 41.0 | 50.8 | 52.1 | 30.8 | 41.0 | - | 46.3 |
| Workplace/experiential | - | - | 76.0 | 68.6 | - | 93.1 | - | - | - | - | - | - |
| Mixed | - | 71.3 | - | - | - | 86.8 | - | - | - | 96.3 | - | 93.0 |
| Other | 82.1 | 74.6 | 85.5 | 69.1 | 83.6 | 82.0 | 81.4 | 78.0 | - | 81.8 | - | 94.3 |

*The MPR rates were omitted from the analysis for strategies recording less than 50 enrolments, strategies where 25% or more of the outcomes were unknown.

# Appendix I

**Table I1: Module completion rate for 15–17, 18–19, 20–24 and 25–54-year-olds (%)***

| Discipline grouping | Age group | Local | Remote | Self-paced scheduled | Self-paced unscheduled | External/ correspondence | Workplace/ experiential | Mixed | Other |
|---|---|---|---|---|---|---|---|---|---|
| Accounting | 15–17 | 71.1 | 97.7 | 73.0 | 57.9 | 59.5 | - | 79.1 | 87.5 |
| | 18–19 | 69.8 | - | 70.7 | 60.5 | 48.8 | 79.3 | 89.4 | 87.2 |
| | 20–24 | 69.2 | - | 73.8 | 52.6 | 33.8 | 93.7 | 80.8 | 70.0 |
| | 25–54 | 79.8 | 96.6 | 83.1 | 63.6 | 41.9 | 90.1 | 73.9 | 75.0 |
| Commercial cookery | | | | | | | | | |
| | 15–17 | 81.0 | 83.0 | 90.1 | - | - | 66.0 | - | 87.0 |
| | 18–19 | 82.4 | - | 82.9 | - | - | 58.8 | 66.4 | - |
| | 20–24 | 81.2 | 44.7 | 90.2 | - | - | 59.6 | - | - |
| | 25–54 | 82.8 | - | 94.7 | 100.0 | - | 80.9 | - | - |
| Computing | | | | | | | | | |
| | 15–17 | 78.3 | 80.3 | 76.8 | - | 59.1 | - | 85.4 | 84.3 |
| | 18–19 | 75.7 | 74.2 | 75.6 | - | 43.3 | - | 92.8 | 80.5 |
| | 20–24 | 74.7 | 75.0 | 75.8 | 55.2 | 36.2 | - | 86.6 | 87.3 |
| | 25–54 | 81.5 | 82.4 | 82.2 | - | 42.1 | - | 86.9 | 83.0 |
| Hospitality | | | | | | | | | |
| | 15–17 | 80.0 | 75.8 | 75.6 | 70.2 | 61.5 | 69.8 | 69.3 | 83.9 |
| | 18–19 | 80.7 | - | 84.6 | 70.6 | 39.2 | 79.8 | 77.9 | 81.8 |
| | 20–24 | 78.0 | - | 83.1 | 73.8 | 44.0 | - | - | 73.1 |
| | 25–54 | 79.8 | 98.8 | 83.8 | - | 53.7 | - | - | - |
| Civil engineering | | | | | | | | | |
| | 15–17 | 71.8 | - | - | - | - | - | - | - |
| | 18–19 | 73.6 | - | 72.5 | - | - | - | - | - |
| | 20–24 | 75.5 | - | 87.5 | - | 35.0 | - | 90.8 | - |
| | 25–54 | 86.2 | 100.0 | 87.4 | - | 41.2 | - | 96.9 | - |
| Electronic engineering | | | | | | | | | |
| | 15–17 | 72.9 | - | 61.3 | - | - | - | 93.2 | - |
| | 18–19 | 69.4 | - | 70.5 | - | - | - | 100.0 | 100.0 |
| | 20–24 | 75.1 | - | 71.6 | - | 58.1 | - | - | 98.8 |
| | 25–54 | 76.6 | 90.2 | 74.8 | 93.5 | 36.3 | 88.9 | 81.8 | 99.4 |

*The MPR rates were omitted from the analysis for strategies recording less than 50 enrolments, strategies where 25% or more of the outcomes were unknown.

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